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ABSTRACT

Definitions of social skills and conceptualizations of social skill deficiencies are presented, along with an overview of social skills assessment, articles on the assessment of social skills with handicapped and nonhandicapped children, and a variety of social skills assessment instruments. Discussed are the following five methods of assessing children's social skills: interviews, ratings, sociometrics, naturalistic observations, and role play or control tasks. In addition, a structured learning approach to social skills training with individual children or groups is examined as are recruitment of reinforcement, and self-instruction training. Appended social skills measures include: "Play with Rating Scale," "Work with Rating Scale," a behavioral sociometric rating form, and teacher and parent social behavior assessment forms. Sample social skills lessons on cooperation and conversation and a homework report form are also appended. Finally, the following articles by Frank M. Gresham are included: "Assessment of Children's Social Skills"; "Social Skills Assessment as a Component of Mainstreaming Placement Decisions"; "Social Skills Training with Handicapped Children--A Review"; "Misguided Mainstreaming--The Case for Social Skills Training with Handicapped Children"; and "Social Validity in the Assessment of Children's Social Skills--Establishing Standards for Social Competency." (SEW)

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Social Skills:
Principles, Procedures & Practices

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Social Skills: Principles, Procedures and Practices

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Chapter 1

Overview of Social Skills

The ability to interact successfully with one's peers is an important aspect of a child's development. Several prominent developmental theorists have noted the relationship between social competence in childhood and psychological adjustment in adulthood. For example, Erikson (1963) states that adequately socialized children successfully move through a series of psychosocial stages that begin with trust in others (infancy) and eventuate in adulthood with a socially-approved sense of self. Piaget (1962) and Kohlberg (1969) have outlined cognitive developmental theories of social and moral development in which socially skilled children move from an egocentric to an altruistic style of social functioning. Like Erikson, Piaget and Kohlberg view social competence evolving in a series of interrelated stages which closely parallel chronological and/or mental age.

The aforementioned developmental theories are perhaps useful at a general level in conceptualizing the social and moral development of children, but they do not identify what specific social skills children need in order to be socially competent. More importantly, these theories do not provide information on how to assess and teach social skills to children who may be deficient in this area. To be practical, a theory of social development should enunciate precisely those social skills which are crucial for social competence and relate specific methods of teaching these skills.

To date, there is no unified theory of social skills, however, social learning theory (Bandura, 1969, 1973, 1977) perhaps comes closest to providing a usable theory for teaching social skills to children. According to social learning theory, the acquisition of social skills takes place through a reciprocal interaction between the child and environmental forces (e.g., the influence of parents, peers, and significant others). Instead of a stage-based notion of social skill development, social learning theory views social competence as being the result of learning through environmental interaction.

The development of social skills is important to children for several reasons. Children who are deficient in social skills have a high incidence of school maladjustment, delinquency, dropping out of school, adult mental health difficulties, and certain forms of childhood psychopathology (see Gresham, 1981a, 1981b for reviews).

Social skills have also been related to the effects of mainstreaming handicapped children. For example, mainstreamed handicapped children are often poorly accepted or socially rejected by their nonhandicapped peers. In fact, handicapped children remaining in self-contained classrooms are better accepted and less often rejected than mainstreamed handicapped children (see Gresham, 1982a for a review). Social interactions between mainstreamed handicapped and nonhandicapped children occur at low rates and often are more negative in nature. Finally, most of the empirical research regarding the social outcomes of mainstreaming suggests that mainstreamed handicapped children do not model or imitate the appropriate social behaviors of their nonhandicapped peers.

Gresham (1982b) has suggested that the above empirical findings indicate that many mainstreamed handicapped children have been placed into more restrictive social environments. Moreover, once placed, provisions are not usually made in the regular classroom to teach social skills. As such, the level of a handicapped child's social skills can and should be used to determine least restrictive environments for individual handicapped children.

Several social skills have been shown to differentiate mainstreamed handicapped children from their nonhandicapped peers. Using the Social Behavior Assessment (SBA), a 136-item teacher rating scale, Stumme, Gresham, and Scott (1982) found that the social skills of independent work, expressing feelings, positive attitude toward self, movement around the environment, and attending behavior best discriminated mainstreamed emotionally disabled from nonhandicapped students. This is consistent with other research showing that teachers tend to focus upon academic-related social skills in differentiating handicapped from nonhandicapped children (Cartledge & Milburn, 1978; Milburn, 1974). Academic-related social skills include: working independently on class assignments, completing assigned tasks, on-task behavior, doing assigned work neatly and correctly, appropriate discussion in the classroom, and following directions.

The above findings suggest that academic-related social skills are those behaviors teachers perceive as being the most deficient in mainstreamed handicapped children. School psychologists can help make mainstreaming a successful experience for handicapped children by targeting and remediating academic-related social skill deficiencies.

Various social skills have been related to other measures of classroom functioning and include: 1) academic achievement, 2) teacher judgments of

social status, 3) delayed cognitive development, 4) attending behaviors, 5) question-asking, and 6) teacher acceptance. It appears that students who possess adequate levels of social skill tend to demonstrate higher levels of academic performance, are viewed by teachers as enjoying higher sociometric status, attend to classroom tasks more frequently, ask more questions, and are better-liked by teachers than socially unskilled children.

It should be apparent by now that social skills are extremely important behaviors for children to learn. We now have an adequate technology to effectively teach social skills using techniques derived from applied behavior analysis and social learning theory. The following sections will present definitions of social skills as well as various ways of conceptualizing social skill deficiencies.

Definitions of Social Skill

There is not one, but several definitions of social skills in the literature. Each definition reflects particular researchers' preferences and often their theoretical predilections. Based upon an extensive review of the literature (Gresham, 1981a, 1981b), one can distill the many definitions of social skill into three basic definitions.

One definition is termed a sociometric definition since some researchers often focus upon sociometric status as the primary outcome measure in social skills training programs. As such, the degree of a child's acceptance in the peer group is taken as an indication of the child's level of social skill. This is one of the best definitions of social skill in terms of predictive validity since sociometric status has the most long-term social behavioral correlates of any other variable (Asher, Oden, & Gottman, 1977; Gresham, 1981b).

The sociometric definition of social skills, however, has a major drawback in that one cannot identify what specific behaviors lead to acceptance in the peer group. This being the case, some researchers have opted for a behavioral definition of social skills.

The behavioral definition defines those behaviors which, when emitted in a particular situation, maximize the probability of producing, maintaining, or enhancing positive effects for the interactor as socially skilled. In other words, behaviors which lead to reinforcement are defined as being socially skilled responses. This definition has the advantage over the sociometric definition in that social behaviors, their antecedents, and their consequences can be

identified, specified, and operationalized for assessment and remedial purposes. A major disadvantage of a behavioral definition of social skills is that these behaviors may not be socially valid. That is, certain behaviors may result in positive outcomes for the individual, but these outcomes may not be considered important by society. For a social skill to be socially valid, the frequency and quality of that skill must make a significant difference in terms of the individual's functioning in society.

A third, and perhaps the most useful, definition of social skills is known as the competence-correlates definition. A competence-correlates conceptualization defines behaviors as socially skilled if these behaviors predict important social outcomes for individuals. Important social outcomes may be acceptance in the peer group, teacher or parent judgments of social competence, success in school, and/or any social behaviors known to correlate with any of the above social outcomes. The competence-correlates approach is a view of social skills that is based upon the idea of social validity. That is, if certain behaviors predict certain social outcomes that society considers important, then these behaviors must be, by definition, socially valid. Conceptually, this is the most logical and efficient definition of social skills because only those behaviors that predict or lead to important social outcomes need be taught. Teaching behaviors that society does not consider important may lead to statistically significant but socially insignificant changes in social behavior. The competence-correlates approach in effect synthesizes the sociometric and behavior definitions into a socially valid view of social competence.

Conceptualization of Social Skills

Before embarking on a social skills training (SST) program, we need to have a conceptualization of social skills that is directly related to training procedures and which will describe the particular type of social skill problem a student is experiencing. Gresham (1981a, 1981b) has conceptualized social skills problems along three dimensions: 1) skill deficits, 2) performance deficits, and 3) self-control deficits.

Children with social skill deficits do not have the necessary social skills to interact with peers. That is, the social behaviors are not within their repertoires or the child does not know a particular step in the performance of a chain of social behaviors. A social skill deficit is similar to

what Bandura (1969, 1977) refers to as an acquisition or learning deficit.

Several examples can be cited to elucidate skill deficits. For example, the child may not know how to carry on a conversation with peers, ask to be recognized in class appropriately, or give a compliment. The barometer to use in determining whether or not a child has a skill deficit is based upon the child's knowledge or performance of the skill. That is, if the child does not know how to perform the skill or he has never been observed to perform it, it is a skills deficit. An example of a skills deficit in which a child leaves out a critical step in a chain of behaviors is giving a compliment. The child may be able to formulate a reason for giving a compliment, may know how to word the compliment, and may choose the most appropriate time for giving the compliment, but may not know how to give the compliment in a clear and sincere voice. This would be a skills deficit in which case the psychologist or teacher would have to teach the child how to compliment clearly and sincerely. Most skills deficits are remediated through social modeling, behavior rehearsal, and coaching.

A social performance deficit describes children who have the social skills in their repertoires, but do not perform them at acceptable levels. Performance deficits can be thought of as a deficiency in the number of times a social behavior is emitted and is related to the child's motivation level to perform these behaviors. As such, the most effective way of increasing the frequency of appropriate social behaviors that are performance deficits is through reinforcement-based procedures and/or with certain stimulus control techniques (e.g., peer initiations, sociodramatics, team games, etc.). The key in determining whether a social skills problem is a performance deficit is whether or not the child can perform the behavior. If the child has ever been observed to perform the behavior, it is a performance deficit. If the child can perform the behavior on command, it is a performance deficit.

Self-control deficits refer to children who may or may not have the social skill in their repertoire, but do not perform them or have not learned them because of some type of emotional arousal that prevents the performance or acquisition of the skill. Emotional arousal responses may be response-inhibiting anxiety, anger, impulsivity, or embarrassment to name just a few. For example, some children may know how to ask to join in a game, but do not do

so because their level of anxiety inhibits responding. Other children may never have learned to make assertive responses when wronged because their level of anger has prevented them from responding assertively rather than aggressively. Self-control deficits are usually remediated through various cognitive-behavioral techniques such as relaxation training, self-talk, self-monitoring, and self-reinforcement.

The next chapter will present an overview of social skills assessment, two articles on the assessment of social skills, and a variety of social skills assessment instruments.

Chapter 2

Assessment of Social Skills

The purpose of this chapter is to provide readers with an overview of the various strategies for assessing social skills. The key thing to keep in mind is that the assessment of social skills must be multifactored in nature since each assessment technique yields slightly different information concerning the level of a child's social skills.

Five methods of assessing children's social skills will be discussed. These are: 1) interviews; 2) ratings; 3) sociometrics; 4) naturalistic observations, and 5) role play or control tasks.

Behavioral Interviews

Interviews with teachers is one of the best ways to define and specify behaviors. To be of value for intervention purposes, school psychologists should employ behavioral interviews which focus upon the definition and specification of behavior and which identify the antecedent, sequential, and consequent conditions surrounding behavior (Bergan, 1977; Gresham, 1981c).

Since teachers are the primary referral sources in the schools, school psychologists can obtain a wealth of information concerning the level of social skills using behavioral interviews with teachers.

Behavioral interviews have several advantages over other methods of assessment. First, the behavioral interview is flexible in that both general and specific information regarding various areas of concern can be ascertained. Thus, interviews allow the psychologist to broaden or narrow the assessment band depending upon the relevance and importance of the information for the interviewee. Other assessment methods such as rating scales, self-report measures, or standardized observation codes may fail to capture the target behaviors of specific concern to teachers whereas these behaviors are more likely to be discussed in interviews.

A second advantage of behavioral interviews is that psychologists can assess teachers' receptivity to various intervention strategies. For a behavioral intervention (e.g., social skills training) to have

social validity, it must be judged by significant others (e.g., teachers or parents) as being socially acceptable. Research emmanating from the behavioral consultation model (Bergan & Neumann, 1980) suggests that certain types of consultant verbal behavior in the interview predict whether or not the consultee will identify resources to be used in implementing an intervention plan. Teachers who are unreceptive to certain behavioral techniques are less likely to implement these techniques properly, if at all. You will notice in the tape that the psychologist suggested an intervention strategy which the teacher rejected. If the psychologist had belabored the point and had tried to force the plan on the teacher, chances are that the plan would not have been successful.

A third advantage of behavioral interviews is that one can often detect irrational beliefs or unrealistic expectations teachers harbor about children. In discussing the assessment of irrational belief systems in consultation, Forman and Forman (1978) identify several irrational beliefs that teachers typically express concerning the utilization of consultative services and the expected behavior or children in the classroom. Other assessment methods (e.g., rating, direct observations, self-report) would not yield information concerning beliefs, values, and expectancies adults possess regarding children's behavior.

A fourth advantage of behavioral interviews is that they allow the interviewer to clarify, modify, and extend the interviewee's verbal desriptions of behavior and situational variables relative to the occurrence of behavior (Linehan, 1977). Teachers and parents typically report behavior in global or "trait-like" terms (e.g., "Mary is a terrible problem," "Bob has a low self-concept," etc.) which usually does not lead to clear descriptions of problem behaviors or effective interventions. Through questioning and clarification in the interview, psychologists can often elicit precise descriptions of behavior and identify the antecedent, sequential, and consequent conditions of which behavior is a function.

A final advantage of behavioral interviews is that they can be used within an ecobehavioral framework. The ecobehavioral perspective holds

that an individual's behavior occurs in the context of and is influenced by ecobehavioral systems of varying size, scope, structure, and complexity. Consequently, we can analyze behavior and its controlling variables at the individual, microsystem (e.g., the classrooms), exosystem (e.g., the school system), and macrosystem (beliefs, values, and attitudes) levels. Behavioral interviews can be conducted with key persons in each of these systems to assess the feasibility or the effects of behavioral interventions on each of these systems. Kratochwill and Bergan (1978) strongly suggest that consultants using behavioral interviews must have skills in the assessment of systems (e.g., the classroom, school, school system, teacher beliefs, etc.) to identify barriers to implementation of intervention plans and to cope with unanticipated effects of interventions on existing systems.

Although behavioral interviews represent the most indirect method of behavioral assessment because of their removal in time and place from the actual occurrence of behavior, their feasibility and applicability within an ecobehavioral system makes them an invaluable behavioral assessment technique. The following section will present a brief overview of Bergan's (1977) behavioral interview strategy because of its relevance to school psychological practice.

Behavioral Consultation Interviews

The most extensive work in the school psychological literature concerning the use of behavioral interviews is that of Bergan and his colleagues (Bergan, 1977; & Neumann, 1980; Bergan & Tombari, 1975, 1976; Brown, Kratochwill, & Bergan, 1982; Kratochwill & Bergan, 1978; Tombari & Bergan, 1978). Behavioral interviews are critical components of Bergan's behavioral consultation strategy; a problem-solving process between a consultant (school psychologist) and a consultee (teacher or parent) designed to deal with learning and/or behavior problems of children and youth. In behavioral consultation, a series of three interrelated behavioral interviews are used as a formal and systematic assessment method. First, the Problem Identification Interview is designed to identify academic or social behavior problems in specific, operational terms so that their baseline levels can be assessed. Second, the Problem Analysis Interview is designed to validate the existence of a problem and to assist teachers

in formulating workable intervention plans. Finally, the purpose of the Problem Evaluation Interview is to assess the success of the intervention plan and to socially validate its effectiveness. In summary, the purposes of these three behavioral interviews are to: (1) identify and define problem behaviors in operational terms, (2) identify antecedent, sequential and consequent conditions influencing the frequency, rate, and/or intensity of these problem behaviors, (3) formulate a method of observing and recording the frequency, rate, or intensity of problem behavior, (4) design an intervention on plan for these problem behaviors, and (5) evaluate the outcomes of this intervention plan.

Rating Scales

Teacher and parent ratings of social skills represent an important assessment strategy. One of the few rating scales that has been devised solely for the assessment of children's social skills is the Social Behavior Assessment (SBA) (Stephens, 1980). The SBA is a 136-item teacher rating scale on which teachers rate all 136 social behaviors on a 0 to 3 scale (see Appendix). The 136 skills are arranged under 30 subcategories, which, in turn, are arranged under four broad categories: 1) Environmental Behaviors, 2) Interpersonal Behaviors, 3) Self-Related Behaviors, and 4) Task-Related Behaviors.

The SBA has been shown to possess adequate content validity as well as appropriate levels of interrater (r = .76 to .97) and test-retest reliabilities (r = .89) (Stephens, 1980). Stumme, Gresham, and Scott (1982) found that the SBA was useful in discriminating mainstreamed handicapped children from their nonhandicapped peers in regular classrooms. Using a discriminant analysis, Stumme et al. (1982) correctly classified 83% of the students into handicapped and nonhandicapped groups on the basis of the 30 SBA subcategories. Also, these authors found that the social skills that contributed most to group differentiation were academic-related behaviors such as independent work, completing tasks, on-task behavior, quality of work, classroom discussion, and following directions. Based upon this investigation, it appears that teachers more highly value those social skills relating to academic performance than social skills relating to

to interaction with peers.

The SBA also has some evidence for factorial validity. Using the 30 SBA subcategories, Stumme, Gresham, and Scott (1982b) found that six factors could explain 67% of the variance in teachers' ratings on the SBA. These six factors did not correspond to Stephen's (1980) original categorization of the SBA. The six factors were labeled: 1) Academic Responsibility, 2) Social Responsibility, 3) Cooperation, 4) Compliance, 5) Adaptive Behavior, and 6) Participation. Each factor appeared to be relatively independent and to explain a significant amount of variance in teacher ratings. The factors of Academic and Social Responsibility accounted for most of the explained variance in teacher ratings of social skills (approximately 38%). Readers should consult the SBA technical manual in the Appendix for more detailed data on the SBA.

The SBA should be used by school psychologists after the interview to have teachers rate the child's social skills. Teachers need not rate all 136 social skills, but only those of most concern. The SBA is also useful in assisting psychologists in defining and constructing observational codes for social behaviors.

Sociometrics

Sociometry is a procedure for measuring the attraction between individual members of a specified group. Several different types of sociometric measures have been developed and there is some evidence to suggest that certain types of sociometric procedures tap different aspects of sociometric status. Three types of sociometric measures will be discussed in this section: 1) peer nominations, 2) peer ratings, and 3) behavioral sociometrics.

The most frequently used sociometric technique is the peer nomination measure. In peer nominations, children are asked to nominate a certain number of classmates according to a specified criteria (e.g., best friends, people they must like to play or work with, etc.). Peer nominations can be either unlimited or limited choice. That is, the instructions can specify that the child nominate all the children in the class whom he considers best friends or the instructions may specify a certain number (e.g., three or four). Nominations can also be positive or negative(e.g., "Name 3 people

you particularly like" or "Name 3 people you don't particularly like"). A child's score on a nomination measure is the total number of nominations received from peers. This is obviously affected by the number of children in the class at the time of assessment. To control for size of classroom, a child's nomination score can be transformed into a ratio as follows:

$$\text{Nomination score} = \frac{\text{number of nominations}}{\text{number in class at time of nomination}}$$

This can also be interpreted as the percent of the class considering the student a best friend, preferred play partner, and so forth. You should always use same sex nominations when collecting sociometric data since there is considerable sex bias in sociometric assessment in the elementary grades.

It is a good idea in using the nomination method to present each student with a class roster and have them circle three same-sex peers that they consider to be preferred playmates or best friends. This will obviously control for momentary forgetting of peers.

A second type of sociometric measure is the peer rating scale. In peer ratings, each child in the class is rated on a 1 to 5 Likert scale according to some specified criteria (e.g., play with, work with, etc.). With elementary-age children, faces corresponding to the number (smiles versus frown) can be drawn to communicate the meaning of each number (see Appendix). Of course, with older children you would want to eliminate the faces and perhaps change the scale criteria (e.g., "Rate on a 1-5 scale the degree you would like to play sports with, work on a project with, play Pac man with, etc. each student in class).

There is some evidence to suggest that peer nominations and peer ratings measure separate dimensions of sociometric status. Gresham (1981d) conducted a factor analytic investigation of three peer nomination measures and two peer rating scales. Results from this investigation suggested that nominations measure a child's popularity or friendship status and peer ratings measure likeability or overall acceptance in the peer group. The distinction between likeability and friendship seems particularly important when we use sociometric measures to validate the outcomes of a social skills training intervention. The question to be answered is: Do we want

to increase the child's popularity as measured by nominations or do we want to increase the child's overall acceptance in the peer group as measured by peer ratings? Although data are sparse, the available literature suggests that it is more feasible to increase the child's overall acceptance than to increase popularity. We currently do not know the effects of having few friends upon a child's long-term psychological adjustment.

A final type of sociometric assessment procedure can be termed a behavioral sociometric. This is termed a behavioral sociometric because children are presented with an items-by-peers matrix and children rate each peer of the behaviors specified (i.e., the items). The advantage of the behavioral sociometric over the nomination and rating methods is that specific behavior (social skills) and their frequencies can be assessed by a child's peers. On nominations and rating measures, only global measures of popularity and acceptance can be obtained.

The number, type, and specificity of items on a behavioral sociometric is unlimited and school psychologists can select items based upon teacher interview and teacher rating scale data. When selecting items in this way, psychologists have an estimation of children's social skills using three methods gathered from two sources (i.e., the teacher and peers). The Appendix contains an example of a behavioral sociometric consisting of 13 items. This is intended as merely one example of how these measures may be constructed. These behavioral sociometrics may be administered to the entire class or (to save time) a random sample of children in the class (e.g., five or six) can be used to solicit the ratings. Each child's score on the behavioral sociometric can be computed as an average score for each item across peers. Alternatively, each child's score can be coverted to a standard score (Z score) for each item. If all of the items are positively stated, such as the example in the Appendix, a composite raw score or scale score can be computed by summing the mean item scores or computing a composite standard score, respectively.

Naturalistic Observations

Observations of a child's social behavior in the natural environment

(e.g., classrooms, playground, cafeteria, etc.) is perhaps the most face valid method of assessing children's social skills. Behavioral observations are the most direct type of behavioral assessment because they measure behavior at the time and place of its actual occurrence. Unlike interviews, ratings, and sociometrics, naturalistic observations are not heavily reliant upon the memory, judgment, or perception of other persons. As such, systematic behavioral observations are an essential component of any behavioral assessment of children's social skills.

The contiguity of naturalistic observations to behavior, however, should not be construed to mean that they will suffice as the sole method of social skills assessment. The frequency with which a particular child exhibits certain social skills does not necessarily predict social acceptance or other important social outcomes. A relatively large body of literature suggests that the quality (positive or negative) and situational appropriateness (timing) is more predictive of sociometric status than global rates of social interaction (see Gresham, 1981a, 1981b for reviews).

Since social skills problems vary across children, and because there are no available standardized observational codes of observations of social skills; school psychologists have to construct their own observational codes. The best way to construct these codes is to utilize the teacher interview, rating scale, and behavioral sociometric data to identify target behaviors to be observed. Using teachers and peers as information sourses increase the probability that you will identify the target behaviors of most concern to both teachers and peers. As such, changing the rate and quality of these behaviors should result in a socially valid intervention (i.e., teacher and peer acceptance should increase).

There are numerous types of behavioral recording procedures (e.g., event, interval, time sampling, duration, etc.). All of these recording procedures, however, measure one of four dimensions of behavior: 1) frequency dimension; 2) temporal dimension; 3) intensity dimension; and 4) direct evidence dimension. (Gresham, 1982c). Event or frequency recording in which each occurrence of a behavior is observed and recorded is probably the most often used and simplest observational technique. Good observational systems include a qualitative

component (positive or negative) to specify the valence of the target behavior. It is beyond the scope of this handbook to discuss the advantages, disadvantages, and nuisances of the other behavioral observation techniques. For most purposes, event recording should yield a reasonable estimate of the operant rate and topography of social behavior.

In observing social behaviors, it is important to collect observations across a variety of settings (classroom, hall, etc.) and situations (large group versus small group activities, structured versus unstructured periods, etc.). The reason for assessing social behavior across settings and situations is that social skills (as any other behavior) often vary as a function of the situation. Additionally, school psychologists should take great care in specifically defining target behaviors and designing observational codes that are mutually exclusive (i.e., making sure the behaviors do not overlap).

Role Play or Contrived Tasks

Behavioral role play tests (BRPT) or contrived tasks have become the hallmark of assessment in social skills research. Unfortunately, performance on BRPTs typically show low correlations with social skills exhibited in naturalistic settings. In other words, being able to perform a particular social skill in a contrived situation does not predict whether or not the child will perform that same social skill in the classroom, on the playground, or at home.

I think there is a logical explanation for the lack of predictive validity of BRPTs. It could be that performance on role play measures is tapping an individual's knowledge of how to behave in a socially skilled manner rather than typical performance in naturalistic settings having somewhat different demands, expectations, discriminative stimuli, and reinforcement contingencies. As such, it could be argued that a demonstrable improvement on a BRPT subsequent to social skills training offers evidence for the remediation of a a skill deficit which usually does not predict performance in naturalistic settings (a performance deficit).

Although BRPTs have little evidence for predictive validity using behavior in naturalistic settings and sociometric measures as criteria. They are useful in differentiating skill from performance deficits. That is, they should be

used diagnostically to assess whether or not the child knows how to perform the skill.

There are several behavioral analytic guidelines that provide standards which can be used to develop BRPTs. These guidelines consist of five steps of behavior analysis as applied to BRPTs: 1) situational analysis; 2) response enumeration; 3) response evaluation; 4) development of measurement format; and 5) evaluation of the measure (Goldfried & D'Zurilla, 1969).

In the situational analysis, an environmental survey is conducted so that the most meaningful and problematic situations that an individual encounters can be identified. Interviews with children and their teachers can be a major source of this information.

The second step, response enumeration, involves assessing the child's responses to the above-mentioned problem situations. Remember that the child should be encouraged to list a number of responses to each problem situation and should not be restricted according to their appropriateness or social desirability. Alternatively, when using teachers as sources of information, the child's observed responses to problem situations in the classroom should be recorded.

In the response evaluation phase, those responses that are most effective are identified. In other words, those behaviors that are most likely to receive favorable reactions from the environment are identified. One way of ensuring that these responses are socially valid is to solicit peer ratings of various responses to a number of problem situations. Having a child's peers rate the quality of particular responses (e.g., on a 1 to 5 scale) should increase the odds that a particular response will be socially valid.

The fourth step in the development of a BRPT is to develop a measurement format such that the responses can be quantified. In this step, you would want to task analyze the social skill in question so that the performance of each step in the correct sequence can be be observed and quantified. For example, the social skill of joining in can be task analyzed into six components: 1) deciding whether or not you want to join an activity; 2) considering advantages and disadvantages of disrupting others; 3) identifying the best way to join in (e.g., introducing

self, asking group if they could use another participant); 4) picking a good time to join in (e.g., break in activity, before another activity is started, etc.); 5) making a joining in statement, and 6) participating in activity if accepted. In a BRPT, the student's performance of each of these steps can be scored 1 or 0 (did or did not do). For Steps 1-3 (the thinking steps), the student's behavior can be assessed by having him think aloud in the role play situation. Performing the steps out of sequence can also be scored by deducting points from the total.

The final step, evaluation of the role play measure, refers to whether or not the BRPT is reliable and valid. That is, do the items (behaviors or skills) on the BRPT agree with one another (internal consistency), are they stable over time (test-retest), do they measure social skills (construct validity), and do performances on BRPTs predict important outcomes for children (social validity)? While most school psychologists will not establish the psychometric properties of BRPTs, this final stage of the behavior analytic process should be kept in mind to prevent overgeneralization of data derived from these measures.

Practice Exercises: Assessment of Social Skills

A. Review of Assessment Procedures

1. List the five methods of assessing childrens's social skills discussed in this chapter.
2. What are some of the advantages of using the behavioral interview as an assessment procedure.
3. What empiricial evidence is there to support the use of the Social Behavior Assessment as a measure of children's social skills?
4. List and describe the three types of sociometric measures discussed in this chapter.
5. Do peer nominations and peer ratings measure the same dimension of sociometric status? Why or why not?
6. What is the major advantage of the behavioral sociometric?
7. What are the four dimensions of behavior that can be measured with naturalistic observations?
8. What behavioral recording procedure was suggested as the most practical for school psychologists and teachers?
9. Describe what you think Behavioral Role Play Tests (BRPTs) are measuring?

10. List and describe the five steps of the behavior analytic model as applied to the construction of BRPTs.

B. Divide into triads and designate one person as school psychologist, one person as teacher, and one person as observer/recorder.

1. The school psychologist should conduct an interview with the teacher to define a social skills problem and to identify the conditions under which the problem behavior occurs.

2. The school psychologist should formulate a hypothesis regarding whether the problem is a skills, performance, or self-control deficit based on the interview information.

3. The school psychologist should, during the interview, ask the teacher to complete additional assessment information such as the Social Behavior Assessment and sociometrics.

4. From the interview, SBA, and sociometric data, the school psychologist and teacher should define target behaviors and arrange an observation system for recording behavior in the classroom.

5. After the interview role play, the observer/recorder should provide feedback to the psychologist regarding his/her effectiveness in securing comprehensive assessment information.

6. Switch roles and enact the same procedure with a different social skills problem.

C. Using the peer nomination form in the Appendix, compute a nomination score for Johnny (five same sex nomination) in a class of 30 children (15 boys and 15 girls).

D. Using the peer rating scale in the Appendix, write 15 children's names in the blanks and assign scores (1-5) to each child's name. Assume a girl, Mary, is being rated. Compute Mary's score using same-sex, opposite-sex, and cross-sex ratings.

E. Using the behavioral sociometric (SPA), write in children's names for each blank and assign a three scores to each of the 13 items by dividing each block into three parts. Compute item scores for each child by averaging the three scores for each item. Compute a total score by summing the average item scores (round to nearest whole number).

F. Using the data in E above, compute a Z score for each child's total score using the following formula:

$$z = \frac{x - \bar{x}}{S}$$

where: $\bar{X} = \frac{\Sigma x}{n}$

$$S = \sqrt{\frac{(x-\bar{x})^2}{n}}$$

G. Using the Social Behavior Assessment in the Appendix, assign the following scores to the following catagories:

Making Conversation		Classroom Discussion	
1)	0	1)	0
2)	1	2)	0
3)	3	3)	2
4)	2	4)	1
5)	0	5)	3
6)	1	6)	2
7)	0		
8)	0		

Turn to the front of the protocol (Example B), a recompute the item scores that are assigned zeros as instructed. Recompute the total subcategory score as instructed.

H. Use the behavioral analytic procedure described in this chapter to construct a 5-item Behavior Role Play Test for the social skill of assertiveness. The steps are as follows:

1. Situational Analysis
2. Response Enumeration
3. Response Evaluation
4. Development of Measurement Format
5. Evaluation of the Measure

Social Skills Training Procedures

A number of procedures have been identified as being effective social skills training procedures. The myriad of procedures can be classified under four major headings: 1) manipulation of antecedents; 2) manipulation of consequences; 3) modeling, and 4) cognitive-behavioral techniques. Many social skills training programs involve a combination of the above techniques and represent the most effective training strategies.

Although there are variations, most social skills training (SST) programs using multiple techniques typically employ a combination of modeling, coaching, behavior rehearsal, and social reinforcement. The advantage and disadvantages of each technique will not be discussed here nor will a review of the literature since these issues are discussed in your reading for this chapter (see "Social skills training with handicapped children: A review"). In the following section, a structured learning approach to SST will be presented. The structured learning approach is offered as a general SST procedure to be used when conducting training with individual children or groups. Strategies to be used when consulting with teachers should be derived from the behavioral consultation model described in a previous DPI publication (Handbook for behavioral consultation, 1982).

Structured Learning: An Overview

The structured learning approach to SST is based upon a directive teaching model (Stephens, 1978). Directive teaching is skill training oriented within a diagnostic-prescriptive model of teaching that consists of four steps. First, behaviors are defined and stated in observable terms, specifying both the movements which make up the behavior and the conditions under which behavior occur. Second, behaviors are assessed using the procedures described in Chapter 2 and the student's level of performance on particular skills are determined. Third, teaching strategies are prescribed to fit the student's needs as determined by the assessment. Fourth, the effects of the teaching procedure on the performance of social skills are empirically validated. This define-assess-teach-evaluate (DATE) model is applied continuously to each deficient social behavior the student possesses.

Directive teaching is predicated on the research literature that suggests the notion that the best way to teach both academic and social skills is through direct instruction. If a child cannot read, teach reading skills. If a child cannot carry on a conversation, teach conversational skills. Much instructional time and effort have been unnecessarily wasted by trying to somehow remediate phantom processing deficits in the academic arena or mystical personality traits or predispositions in social skills arean (e.g., level of self esteem, social maturity, various affective states, etc.). The key point to remember is that the most effective means of teaching social behavior is by teaching it directly. The vast literature supporting social learning theory (Bandura, 1969, 1977) suggests that most social behavior is learned either through tuition (coaching) or modeling (i.e., observational learning). As such, we as empiricists should utilize those procedures that have the strongest base of empirical support to teach social skills.

Components of Structured Learning

Structured learning as presented here consists of five basic steps: 1) establish the need; 2) identify skill components; 3) modeling; 4) behavior rehearsal, and 5) generalization training. Each of these components will be discussed in the following paragraphs and examples of the application of structured learning to the teaching of various social skills are provided in the Appendix.

Establish the need. The first step in SST is to establish the need for the child to perform the social skill in question. This makes the skill relevant for the child, specifies why the skill is important, what benefits are derived from learning the skill, and what disadvantages might accrue from not knowing or not performing the behavior.

The need for performing particular social skills can be established by reading hypothetical stories about age-appropriate children, generating ideas about the advantages of the skill via group discussion (i.e., brainstorming), films, fimlstrips, or other audio-visual equipment. For example, discussion of the advantages of performing the skill could relate to specific problem situations children are experiencing (e.g., getting along with peers, dealing

with teasing, overcoming shyness, etc.). Remember that the purpose of this first step is to make the skill and its probable outcomes salient for the child. Chances are, the child has not really thought about the performance of the skill, its consequences, and the effects this will have upon the future behavior of himself as well as others.

Children should also be taught to discriminate both the short-term and long-term consequences for performing particular social skills. Examples of short-term consequences include receiving recognition in the group, having refreshment during the group, avoiding homework assignments, and so forth. Long term consequences could include such outcomes as being popular in school, having the respect of teachers and peers, being a leader in school, and the like. Before teaching each skill, be sure you have identified several short-term and long-term consequences for performing and not performing the skill.

Identify skill components. This step immediately follows the discussion regarding the need to perform the skill being taught. You should elicit from the group the specific behaviors that make up the skill in their proper sequence. In other words, you task analyze the social skill to be taught. The specificity and number of subtasks identified will, in part, be dictated by the age and degree of sophistication of the group. You should be careful not to attempt too many steps in your analysis since they will likely be forgotten or placed out of sequence if the number of steps is too great.

A recurrent question in task analyses of social skills is how large do I make the subtasks? This is an important question that merits some discussion. First, much of the social skills research has used relatively mollecular behaviors such as eye contact when speaking, number of on-topic questions, number of assertive responses, physical proximity to other people during interaction, and the like. Other research has focused upon relatively molar behaviors such as sharing with others, cooperating, being nice, and so forth.

Neither mollecular nor the molar levels of analyses are the most appropriate for task analyzing social skills. The algorithm to keep in mind when conducting such a task analysis is analyze at the level of what people do. That is, people don't just have good conversational skills (molar interpretation),

they do the following: 1) identify a topic for conversation; 2) greet another person; 3) make eye contact; 4) make introductory small talk; 5) decide if the other person is listening, and 6) move on to the topic of conversation identified at Step 1. Each of these steps can be directly taught in their proper sequence and mistakes in the performance or sequencing of these steps can be corrected. A molar approach does not provide specific feedback on why the performance was not satisfactory. By the same token, a mollecular coneptualization is not likely to be very meaningful to children (e.g., "You only looked at the person 46% of the time while you were speaking"; "You had only 2 on-topic questions in a 5-minute conversation", etc.)

It is strongly recommended that children be helped to analyze the components (subtasks) of a social skill themselves rather than being told what they should be. For example, for the skill of friendship making, a film or story could be presented that depicts children successfully making friends, followed by a discussion to identify specific responses that helped the fictional characters to make friends (i.e., the task analysis). As the component behaviors are generated, they can be listed and sequenced on a chalkboard or chart such as:

Step 1 - Say, "Hi, how are you? My name is_____, what's yours?"

Step 2 - Ask something like, "Where are you from?" or "What are you doing?"

Step 3 - Invite him or her to do something, "I want to play checkers. Would you like to play with me?"

In identifying component behaviors, trainers should use the child's own words as much as possible and take into consideration the developmental levels and cultural differences of the children. Handicapped children will probably require more prompts in identifying specific behaviors and in correctly sequencing these responses. Moreover, handicapped children may require relatively more repetitions of the response identification and sequencing phases to facilitate overlearning of the responses. They probably will also need verbal prompts to employ the strategies taught since many of these children (especially the mildly retarded) will not spontaneously use

the strategies that were taught.

Modeling. Modeling is one of the most effective and efficient ways of teaching social behavior. It can be used to inhibit or disinhibit behavior and has been employed to teach a variety of social behaviors. Modeling is efficient in the sense that component behaviors of a particular social skill do not have to be taught using a time-consuming shaping process. Since shaping involves reinforcement of successive approximations to the desired terminal response, it is a relatively lengthy, drawn-out procedure. Modeling, on the other hand, presents the entire behavior at once and also teaches how the specific behaviors in a sequence can be integrated into a composite behavior (i.e., the social skill).

The psychological processes that are required to learn and perform a skill through modeling are as follows: 1) attention; 2) retention; 3) motor reproduction, and 4) motivation. That is, a person has to attend to the modeled behavior, to retain the behavior in memory, have the motoric skills necessary to reproduce the modeled behavior, and have some incentive or motivation to perform the modeled behavior. The first two processes, attention and retention, are necessary for learning or skill acquisition. This relates back to the distinction made in Chapter 1 between social skill versus social performance deficits. Modeling can be used to remediate both skill and performance deficits, although it is used primarily to teach new social behavior or to demonstrate proper response integration and sequencing. Modeling can also be used to remediate self-control deficits since it has been demonstrated that exposure to proper models can reduce certain emotional arousal responses such as anxiety, anger, impulsivity, and the like (Bandura, 1977).

Modeling can take a variety of formats including videotape or film modeling, verbal modeling via books and stories, and live modeling. For most purposes, live modeling will prove to be the most practical and flexible teaching procedure.

Modeling displays should be presented in a clear and detailed manner, should call attention to the component behaviors, and should be presented using several different models if necessary. It is a good idea to have members of the group monitor whether or not you followed each of the steps and properly sequenced them when you demonstrate behavior through modeling.

You can also identify each step verbally as you are modeling the skill to make each component behavior more salient.

The modeling procedure works like this when you are teaching social behavior. After having established the need for performing the skill and having identified the skill components, you should choose another child with which to role play the skill. You can verbalize the steps aloud while modeling the skill (e.g., "First, I say hello", "Then, I ask the other person's name." "Finally, I ask them if they want to play."). You may have to model the skill several times with different partners depending upon the complexity of the skill and the sophistication of the group.

After the modeling display, a discussion should follow and should provide answers to the following questions:

1) What behaviors occurred?
2) Did the model complete all of the responses the group listed on the board?
3) Were the responses properly sequenced?
4) Was the model effective in performing the skill? Why?
5) How do you think the model felt after performing the skill? Why?
6) What other responses might the model have used in this situation?

This discussion helps children think about consequences of social skills, assists them in retaining the steps necessary to perform the social skill, and teaches them to discriminate effective from ineffective performances.

It is not necessary for you to always be the model for particular social skills. You may want to form a SST group using peer confederates who have a high level of social skills. These children can be trained by you before the group starts and can be effectively used to provide the modeling displays. When working with groups of handicapped children, I see the use of non-handicapped peer confederates as being a major step in the successful social integration of handicapped children into the mainstream of the school environment.

Behavioral rehearsal. The purpose of this step is to have students practice or exercise the skill with each other and receive feedback from you and peers regarding the quality of skill performance. Observed behavior will

not necessarily be learned unless some mechanism is put into operation whereby the observed behavior is retained and subsequently reproduced. Modeled behaviors must be practiced by the child before he can produce them in real-life situations. Behavior rehearsal represents a form of structured role playing that enables the student to act out and practice the new behaviors.

The behavior rehearsal phase should use the same behaviors that were modeled by you or the peer confederate except that in this step, two students in the group practice the skill. You can initiate this step by asking for two volunteers to rehearse the skill. This can serve as an additional modeling display for the group.

Response feedback is a critical component of the behavior rehearsal phase since feedback about performance is necessary for the child to make the necessary corrections to improve his skills. Feedback takes a variety of forms such as verbal feedback where the child receives corrective instructions or praise, tangible reinforcers for correct performance, and/or self-evaluation whereby the child is taught to evaluate his own performance.

Behavior rehearsal sequences should be followed by a discussion for the purposes of indicating better ways of performing the skill, suggesting alternative responses, and social reinforcement. As you probably have surmised, both the modeling and behavior rehearsal phases contain a large coaching component. Coaching is a direct instructional technique that primarily utilizes verbal instruction and feedback in teaching social behavior. This combination of modeling, behavior rehearsal, and coaching often leads to better skill performance than any single procedure in isolation.

Generalization training. Social skills are relatively useless behaviors to have in one's repertoire unless they are performed in "real-life" settings and situations. For social skills to have any functional or adaptive value, they must be generalized from instructional settings into other settings, to other persons, and over time.

Historically, generalization has been considered a passive phenomenon. That is, generalization has typically not been viewed as a response that could be taught, but as a description of a "natural" outcome of any behavior-change process (Stokes & Baer, 1977). Any teaching operation repeated over time and trials inevitably involves varying samples of stimuli rather than using the same stimuli each time. In the same way, varying samples of

behavior are evoked and reinforced by these different stimuli. As a consequence, newly taught responses will be controlled not only by the stimuli of the teaching program, but by others resembling those stimuli. Likewise, responses resembling those established directly, yet not themselves actually touched by the teaching procedures would appear as a result of teaching. Thus, generalization has traditionally been conceptualized as something that happened (i.e., a passive phenomena) rather than something produced by procedures specific to it (i.e., an active phenomena) (Stokes & Baer, 1977).

Generalization can be defined as the occurrence of relevant behavior under different, nontraining conditions (i.e., across subjects, settings, people, behaviors, and/or time) without the scheduling of the same events in those conditions as had been scheduled in the training conditions.

Generalization of behavior can be claimed under two conditions: (1) when no extratraining manipulations are needed for extratraining changes or (2) when some extratraining manipulations are necessary, but their cost or extent is clearly less than that of direct intervention. For example, suppose you teach the social skill of verbal complimenting in a group situation. If verbal complimenting also occurs in the classroom after training, you may claim that generalization across settings has occurred. If you provided absolutely no programming for verbal complimenting outside of the group setting, you have fulfilled the first conditon for generalization. If you instructed the classroom teacher to verbally reinforce complimenting behavior, you have fulfilled the second condition for generalization (assuming you used more extensive procedures to teach complimenting in the group). Generalization is not claimed when similar events are necessary for similar effects across conditions. For example, if you used a combination of modeling, coaching, behavior rehearsal, and social reinforcement to teach sharing in the group setting and you had the teacher use these same procedures in the classroom to promote sharing, behavior, generalization could not be claimed.

There are four major descriptive classes of generalization: (1) across settings; (2) across behaviors; (3) across time; (4) across subjects. Generalization across settings refers to a change in behavior in settings

separate from the specific environment in which training occurred. Behavior generalization refers to a change in behavior not specifically programmed for change in the training program (e.g., teaching complimenting and you note a concomitant increase in sharing behavior). Generalization across time refers to the continuation of behavior change in the treatment setting following the withdrawal of a social skills training program. Finally, subject generalization refers to a change in the behavior of nontarget children after the training procedure has produced a change in the behavior of target children (e.g., teaching Dan to make positive statements about himself and noting an increase in this behavior for Jeff, Susan, and Tom.

There are a number of programming techniques that have been successfully applied to promote generalization. Five procedures will be presented as means of actively programming for generalization: (1) equate stimulus conditions; (2) train with different people; (3) train in different settings; (4) change the nature of reinforcement; and (5) self-instruction/self-reinforcement.

A frequent occurrence in social skills training programs is that newly taught skills are exhibited only in the setting or settings in which they are taught. Thus, many behaviors taught in one setting do not naturally transfer to other settings. A moment's reflection may reveal why this is the case. Recall that the whole purpose of a behavior change program (at least initially) is to bring certain behaviors under tight stimulus control (e.g., having a child smile and greet others appropriately in the group setting. After many trials (and reinforcement) of this behavior, children learn to predict (discriminate) under what conditions (i.e., under what set of stimulus conditions) certain behaviors will be reinforced.

One way to "equate stimulus conditions" is to begin to approximate regular classroom conditions by requiring children to perform under some conditions found in the classroom. To be accurate in your generalization programming, you should know the stimulus conditions of the setting to which the child is returning. You should gradually fade out the conditions under which the child initially learned the skill and gradually fade in conditions approximating the classroom or other settings.

The following procedures are recommended by Cartledge and Milburn (1980)

to facilitate generalization across stimulus conditions:

(1) Set up role plays where the child demonstrates how he will perform the behavior in other settings.

(2) Establish reinforcing conditions for expressing the target behavior in other settings. For example, have the child identify individuals in other settings or situations in other settings that may lead to reinforcement.

(3) Assist the child in developing a personal recordkeeping system or diary in which he records performing the target behavior in other settings, with incentives (reinforcement) for his performance.

Teaching social skills using only one trainer brings the performance of trained social skills under the stimulus control of that one trainer. Thus, the child learns to discriminate in whose presence the social skills are to be performed. By using more than one trainer, social skills are more likely to generalize to different settings. Also, training with different peers will facilitate generalization of trained skills. If the child is to be mainstreamed, a viable generalization strategy would be to bring in several peers from the regular classroom for social skills training sessions.

This technique is equivalent to the strategy of training sufficient exemplars discussed earlier (termed training sufficient setting exemplars). Stokes and Baer (1977) state that frequently training in only two settings facilitates generalization to other settings. In terms of practicality, you may want to train in the special class setting plus one other setting (e.g., cafeteria, playground, etc) to promote generalization. There is often a relationship between the required number of setting exemplars and the diversity of the setting. That is, the more similar the settings, the more settings in which one will have to train. The more diverse the settings, the less settings in which one will have to train.

Recruitment of Reinforcement

As previously mentioned, many social skills should be reinforced "naturally" across settings. One problem, however, with this logic is that persons in the natural environment do not reinforce the performance of social skills on a

consistent basis. The net effect of this, unfortunately, is that trained social skills fail to generalize (i.e., they are extinguished).

A third way to program for generalization is to train in different settings. Stokes and Baer (1979) indicate that training in only two settings frequently facilitates generalization to other settings. There are several ways in which you could facilitate generalization using training procedures in different settings. One, you could have students practice particular social skills in "real-life" settings such as the cafeteria, playground, hall, and so forth. For example, you could send two members of the group to the office to ask for a particular item or supply. One student would be designated as the person practicing the skill, the other being the observer/reporter. When the students return, you could have the observer/reporter tell the group how the social skill was carried out, what steps were followed, and what the outcome was. Depending upon the outcome, you could role play the situation in the group to sharpen skill performance.

Another approach would be to conduct some training sessions on the playground or other areas of the school. This allows for exposure to different stimuli and should make generalization more likely. Remember, there is often a relationship between the required number of setting exemplars and the diversity of the setting. That is, the more similar the settings, the more settings in which one will have to train. The more diverse the settings, the less settings in which one will have to train.

A fourth way to promote generalization is to change the nature of reinforcement. This can be accomplished by varying the type, frequency, immediacy, and source of reinforcement. For example, you can use social, tangible, conditioned (e.g., points, tokens, etc.), and activity reinforcers to increase behavior. Since individuals often show satiation effects when being reinforced with the same reinforcer, you should vary the reinforcers to prevent these satiation effects. More importantly, you should (after an adequate number of training sessions) begin to use those reinforcers that are likely to occur in the natural environment. Thus, while you may begin with tangible or conditioned reinforcers, you should fade these and begin using social reinforcers (e.g., smiles, praise, etc.).

The frequency or schedule of reinforcement should also be changed to promote generalization. To teach a new behavior, reinforcement should be provided on a continuous reinforcement schedule (i.e., reinforcement after each response). Once established, these behaviors are likely to persist if the schedule of reinforcement is changed from a continuous to an intermittent schedule. This "thinning" of the reinforcement schedule makes the delivery of reinforcement unpredictable thereby causing the persistance of behavior (i.e., the child's behaviors persists in the anticipation that the next response will be reinforced). Perhaps the most workable schedule to use in a group context is a variable ratio reinforcement schedule. Behavior reinforced on a variable ratio schedule is the most resistant to extinction and appropriates how most behavior in the natural environment will be reinforced. You may reinforce on a continuous schedule to get the behavior to occur at suitable levels in the group and subsequently "thin" the schedule to a variable ratio (e.g., reinforce, on the average, of every 5 responses - VRS). Obviously, in the "real world" children are not going to be reinforced by the environment every time they exhibit particular social skills. As such, if they are maintained on a continuous schedule of reinforcement, their social skills will be extinguished quite rapidly in "real life" situations when continuous reinforcement is not forthcoming. Thinning to a variable ratio schedule during training "prepares" children to encounter "real life" consequences of performing social skills (i.e., they will not be reinforced each time).

Two additional ways of changing the nature of reinforcement are to vary the immediacy and sources of reinforcement. In the former case, you can gradually move from immediate to delayed reinforcement. Once behavior is firmly established using immediate reinforcement, you can gradually delay reinforcement over longer periods of time to more closely approximate the natural environment. This can be done in group settings by utilizing point systems, contingency contracts, and delayed social or activity reinforcers. The source of reinforcement can be changed by having peers reinforce in the group instead of the trainer or having "guests" come in and provide reinforcement. The more sources of reinforcement, the more likely the behavior is

to generalize.

Some writers (Meichenbaum, 1977) have stressed the importance of developing cognitive mediators to assist the child in generalizing social skills across settings, behaviors, situations, and time. Bandura (1977) suggests that response patterns can be represented in memory and retained in symbolic form through imagery and veralization. Some data suggest that behavior learned through modeling is acquired and retained more effectively with mental and verbal rehearsal in addition to behavior rehearsal (Cartledge & Milburn, 1980).

Self-instruction training consists of a technique in which individuals influence their own behavior by instructing themselves to perform particular responses. In other words, children are taught to talk to themselves in a way that guides their behavior through a series of discrete steps eventuating in the target response.

Children are usually taught to ask themselves four questions:

(1) What am I supposed to do?

(2) How can I do it?

(3) Am I using my plan?

(4) How did I do?

Their answer to the first question ("What am I supposed to do?") guides them to focus on a specific task. In answering the second question ("How can I do it?"), the child is taught to brainstorm a number of plans for solving his problem. Answering (thinking about) the third questions teaches children to keep on task in performing certain behaviors. The final question ("How did I do?") is a self-evaluation strategy that allows the child to determine the success of his behavior.

Self-instruction training seems like a good way to generalize behaviors since the child can transport this strategy cross-situationally. The empirical evaluation of self-instruction, however, is less favorable. For example, there is no conclusive evidence that self-instruction leads to any greater generalization than the previously discussed operant strategies. At present, it is probably more judicious to use self-instruction in combination with some of the aforementioned operant generalization techniques.

Self-reinforcement has been one of the most discussed topics of behavior

change and generalization promotion in recent years. Actually, self reinforcement is the last step in the following sequence of events:

(1) Self Monitoring - Tracking the frequency, duration, or intensity of one's behavior across settings.

(2) Self Evaluation - Determination of the adequacy of one's performance and

(3) Self Reinforcement - The self administration of reinforcement contingent upon appropriate performance of target behavior.

In fact, there is some evidence that "self reinforcement" is actually a myth (Cantania, 1975). To make a long story short, "selves" are not reinforced - behaviors are reinforced. Moreover, it appears that individuals might not be able to self-administer consequences adequately without some sources of external reinforcement. That is, some consequences may be required from external agents to sustain accurate self-reward and to ensure that reinforcers are not merely taken noncontingently (Kazdin, 1977). The question one must ask is: If external consequences and external monitoring are required to produce the effects of self reinforcement, then how can we call this process self reinforcement?

The only suggestion this writer can make at this time regarding "self reinforcement" is that trainers of social skills should not waste great amounts of time in teaching a child to "self reinforce" in the absence of empirical data supporting the efficacy of this procedure.

Stokes and Baer (1977) list the following "how-to-do-it" strategies in programming generalization:

(1) Look for a response that enters a natural community; in particular, teach children to cue their potential natural communities to reinforce their desirable behaviors.

(2) Keep training more exemplars; in particular, diversify them.

(3) Loosen experimental control over stimuli and responses involved in training; in particular, train different examples concurrently, and vary instructions, S^Ds, social reinforcers, and backup reinforcers.

(4) Make unclear the limits of training contingencies; in particular, conceal, when possible, the point at which those contingencies stop operating, possibly by delayed reinforcement.

(5) Use stimuli that are likely to be found in generalization settings in training settings as well; in particular, use peers and tutors.

(6) Reinforce accurate self reports of desirable behavior; apply self-recording and self-reinforcement techniques whenever possible.

(7) When generalizations occur, reinforce at least some of them at least sometimes, as if "to generalize" were an operant response class.

Practice Exercises: Social Skills Training Procedures

A. Review of Social Skills Training Procedures

1. What is directive teaching and how does it relate to social skills training?

2. What are the four steps making up the DATA model? How does each step relate to the entire social skills training process?

3. What are the five steps in the structured learning approach to social skills training?

4. Briefly describe the importance of each step.

5. What are molar and mollecular levels of social skill?

6. What are the four psychological processes necessary for learning and performing a skill through modeling?

7. What is coaching and how does it enter into the structured learning model?

8. What are some ways to program for generalization?

B. Split into dyads. Each dyad should select one of the following social skills and write a task analysis for the skill. Remember to write the analysis at the level of what people do.

Social Skills for Task Analysis

1) Asking a peer for help

2) Greeting others

3) Waiting one's turn when playing a game

4) Making positive statements about others (complimenting)
5) Asking another student to play
6) Sharing toys or school equipment
7) Apologizing to others
8) Gaining peer attention in appropriate ways
9) Expressing sympathy to peers about problems or difficulties
10) Dealing with teasing
11) Making positive statements about oneself
12) Makes relevant remarks in class discussion
13) Ignores peer distractions when doing seat work
14) Refuses requests of others politely
15) Questions class rules that may be unjust in an appropriate manner

C. A dyad should use their task analysis to teach their social skill to the rest of the group. Follow the steps of the structured learning model to teach your social skill. The group leader should provide feedback on how well the dyad did at the task analysis and in teaching the social skill.

D. Additional dyads should use their task analyses to teach their social skills to the group. Complete as many as is needed for accurate performance and as time permits.

E. Each dyad should identify at least <u>three</u> strategies for programming generalization of their skill. These strategies should be discussed by the group as to their probable effectiveness and practicality.

Appendix A: Social Skills Measures

Peer Nomination

Play With Rating Scale

Work With Rating Scale

Behavioral Sociometric

Social Behavior Assessment - Teacher

Social Behavior Assessment - Parent

Peer Nomination

1. List your 3 best friends.

2. List 3 people in the class that you would most like to play with.

3. List 3 people in the class that you would most like to work with.

Alternative Format

Provide children with class rosters and have them check their 3 best friends, play partners, etc.

PLAY WITH RATING SCALE Boy Girl

School _____ Grade _____

Teacher _____ Your Name _____

Directions: Put the number of the face that tells how much you like to play with each person in your class in the box beside their name. Do not rate yourself.

1	2	3	4	5
Not at All	Not Much	Doesn't Matter	A Little	A Lot
1	2	3	4	5

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

Name _____ Boy Girl

WORK WITH RATING SCALE

Directions: Put the number of the face that tells how much you like to work with each person in your class in the box beside their name. Work with means things like being in reading group, doing assignments together, going to the library, and helping one another out on things like reading, arithmetic, science, and other school subjects. Do not rate yourself.

1	2	3	4	5
Not at All	Not Much	Doesn't Matter	A Little	A Lot
1	2	3	4	5

_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

☐_____ ☐_____ ☐_____ ☐_____

SPA

DIRECTIONS:

The purpose of this activity is to find out which people in the class do certain things more than others. You will see 13 sentences listed down the side of the page and several people's names listed across the page. Rate each of the students listed as follows:

3 = If the person does the following things a lot.
2 = If the person does these things sometimes.
1 = If the person never does these things.
0 = If you don't know this person.

3 = A lot

2 = Sometimes

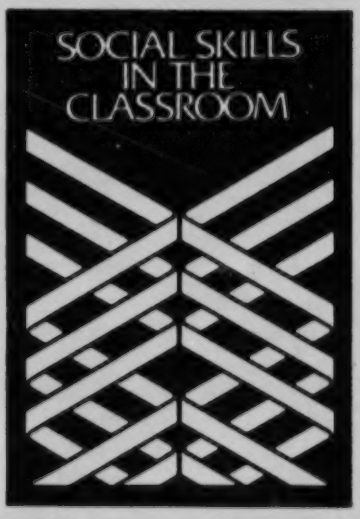
1 = Never

0 = Don't know person

Statements (name)						
1. Says nice things to others.						
2. Says please and thank you.						
3. Smiles at others.						
4. Says hello to others.						
5. Listens to others.						
6. Helps others.						
7. Shares with others.						
8. Says excuse me.						
9. Waits his turn when playing.						
10. Participates in school activities.						
11. Fun to talk to.						
12. Is liked by others.						
13. Follows rules in games and class.						

Social Behavior Assessment

for use with
SOCIAL SKILLS IN THE CLASSROOM



Student's Name _____ (Last / First / Middle)

Sex ☐ Female ☐ Male

Home Address _____ (Street)

_____ (City / State / Zip)

Birth _____ (Month / Day / Year) Age ____

Teacher _____

School _____

Address _____

Observation Completed by: _____

Title: _____

Current School Grade

- ☐ Ungraded
- ☐ Kindergarten
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

Type of Class

- ☐ Regular
- ☐ Ungraded
- ☐ Special
  Specify: _____
- ☐ Other
  Specify: _____

Size of Class (Number of Pupils)

_____
_____
_____
_____

INSTRUCTIONS TO THE OBSERVER:

This inventory is designed to be used with *Social Skills in The Classroom* (Stephens, 1978). Although, it may also be used by those who wish to develop their own teaching activities. When the student is observed with opportunities to display a listed behavior, rate the performance as shown below and record the date.

Numbers next to each item show the pages in the text in which the skill is found.

Ratings

0 = Behavior not observed or not applicable for the student.

1 = Behavior is exhibited at an acceptable level.

2 = Behavior is exhibited at a lower-than-acceptable level.

3 = Behavior is never exhibited.

EXAMPLE A

Dealing with Emergency - DE

Date		
11-4-80	Follows rules for emergencies.	1
11-4-80	Identifies accident or emergency situations which should be reported.	1
11-4-80	Reports accidents or other emergencies to teacher.	2
	Total - DE	4

EXAMPLE B

When a rating of 0 is used, average the total of the other items. Use the average in place of 0.

Dealing with Emergency - DE

Date		
11-4-80	Follows rules for emergencies.	0 (2)
11-4-80	Identifies accident or emergency situations which should be reported.	1
11-4-80	Reports accidents or other emergencies to teacher.	2
	Total - DE	3 (5)

ENVIRONMENTAL BEHAVIORS - ER

Care for the Environment - CE

Date			
_____	Disposes of trash in the proper container.	41	_____
_____	Drinks properly from water fountain.	45	_____
_____	Cleans up after breaking or spilling something.	48	_____
_____	Uses classroom equipment and materials correctly.	51	_____
_____	Uses playground equipment safely.	54	_____
	Total - CE		_____

Dealing with Emergency - DE

_____	Follows rules for emergencies.	57	_____
_____	Identifies accident or emergency situations which should be reported.	61	_____
_____	Reports accidents or other emergencies to teacher.	64	_____
	Total - DE		_____

Lunchroom - LR

_____	Uses eating utensils properly.	69	_____
_____	Handles and eats only own food.	72	_____
_____	Disposes of unwanted food properly.	75	_____
	Total - LR		_____

Movement Around Environment - MO

_____	Walks through the hall quietly at a reasonable pace.	79	_____
_____	Enters classroom and takes seat without disturbing objects and others.	82	_____
_____	Forms and walks in a line.	85	_____
_____	Follows safety rules in crossing streets.	88	_____
	Total - MO		_____

INTERPERSONAL BEHAVIORS - IP

Accepting Authority - AA

Date			
_____	Complies with requests of adults who are in positions of authority.	95	_____
_____	Complies with requests of peers who are in positions of authority.	102	_____
_____	Knows and follows classroom rules.	106	_____
_____	Follows classroom rules in the absence of the teacher.	110	_____
_____	Questions rules which may be unjust.	113	_____
	Total - AA		_____

Coping with Conflict - CC

_____	Responds to teasing or name-calling by ignoring, changing the subject, or some other constructive means.	121	_____
_____	Responds to physical assault by leaving the situation, calling for help, or some other constructive means.	127	_____
_____	Walks away from peers when angry to avoid hitting.	133	_____
_____	Refuses requests of others politely.	137	_____
_____	Expresses anger with non-aggressive words rather than physical action or aggressive words.	143	_____
_____	Handles constructively criticism or punishment perceived as undeserved.	147	_____
	Total - CC		_____

Gaining Attention - GA

_____	Gains teacher's attention in class by raising hand.	153	_____
_____	Waits quietly for recognition before speaking out in class.	157	_____
_____	Uses *please* and *thank you* when making requests of others.	160	_____
_____	Approaches teacher and asks appropriately for help, explanations, instructions, and so forth.	163	_____
_____	Gains attention from peers in appropriate ways.	166	_____
_____	Asks peers for help.	171	_____
	Total - GA		_____

Greeting Others - GR

_____	Looks others in the eye when greeting them.	177	_____
_____	States name when asked.	180	_____
_____	Smiles when encountering friends or acquaintances.	182	_____
_____	Greets adults and peers by name.	185	_____
_____	Responds to an introduction by shaking hands and saying *how do you do.*	188	_____

_____	Introduces one's self to another.	191	_____
_____	Introduces two people to each other.	194	_____
	Total - QR		_____

Helping Others - HP

_____	Helps teacher when asked.	197	_____
_____	Helps peer when asked.	200	_____
_____	Gives simple directions to peers.	203	_____
_____	Offers help to teacher.	207	_____
_____	Offers help to classmate.	210	_____
_____	Comes to defense of peer in trouble.	214	_____
_____	Expresses sympathy to peers about problems or difficulties.	219	_____
	Total - HP		_____

Making Conversation - MC

_____	Pays attention in a conversation to the person speaking.	225	_____
_____	Talks to others in a tone of voice appropriate to the situation.	229	_____
_____	Waits for pauses in a conversation before speaking.	233	_____
_____	Makes relevant remarks in a conversation with peers.	237	_____
_____	Makes relevant remarks in a conversation with adults.	240	_____
_____	Ignores interruptions of others in a conversation.	243	_____
_____	Initiates conversation with peers in informal situations.	246	_____
_____	Initiates conversation with adults in informal situations.	249	_____
	Total - MC		_____

Organized Play - OP

_____	Follows rules when playing games.	255	_____
_____	Waits turn when playing games.	259	_____
_____	Displays best effort in competitive games.	262	_____
_____	Accepts defeat and congratulates the winner in competitive games.	266	_____
	Total - OP		_____

Positive Attitude Toward Others - PA

_____	Makes positive statements about qualities and accomplishments of others.	269	_____
_____	Compliments others.	274	_____
_____	Displays tolerance for others with characteristics different from one's own.	278	_____
	Total - PA		_____

Plays Informally - PL

_____	Asks other students to play.	285	_____
_____	Asks to be included in a play activity in progress.	289	_____
_____	Shares toys and equipment in play situations.	293	_____
_____	Gives in to reasonable wishes of the group in play situations.	296	_____
_____	Suggests an activity for the group on the playground.	300	_____
	Total - PL		_____

Property: Own and Others - PR

_____	Distinguishes one's own property from that of others.	306	_____
_____	Lends possessions to others when asked.	309	_____
_____	Uses and returns other's property without damage.	313	_____
_____	Asks permission to use another's property.	316	_____
	Total - PR		_____

SELF-RELATED BEHAVIORS - SR

Accepting Consequences - AC

_____ Date	Reports to teacher when something has been spilled or broken.	323	_____
_____	Apologizes for hurting or infringing on others.	326	_____
_____	Accepts consequences for wrong-doing.	330	_____
	Total - AC		_____

Ethical Behavior - EB

_____	Distinguishes truth from untruth.	335	_____
_____	Answers when asked about wrong-doings.	340	_____
_____	Identifies consequences of behavior involving wrong-doing.	345	_____
_____	Avoids wrong-doing when encouraged by peers.	348	_____
	Total - EB		_____

Expressing Feelings - EF

_____	Describes one's own feelings or moods verbally.	355	_____
_____	Recognizes and labels moods of others.	360	_____
		Total - FF	_____

Positive Attitude Toward Self - PA

_____	Says "Thank you" when complimented or praised.	367	_____
_____	Willingly has work displayed.	370	_____
_____	Makes positive statements about self.	373	_____
_____	Undertakes new tasks with positive attitudes.	377	_____
		Total - PA	_____

Responsible Behavior - RB

_____	Attends school regularly.	383	_____
_____	Arrives at school on time.	386	_____
_____	Hangs clothes in required place.	389	_____
_____	Maintains orderly desk.	392	_____
_____	Takes care of possessions.	396	_____
_____	Carries messages for teacher.	399	_____
_____	Brings required materials to school.	402	_____
		Total - RB	_____

Self Care - SC

_____	Uses toilet facilities properly.	403	_____
_____	Puts on clothes without assistance.	408	_____
_____	Keeps face and hands clean.	411	_____
		Total - SC	_____

TASK RELATED BEHAVIORS - TR

Asking and Answering Questions - AQ

_____ Date	Tries to answer questions when called upon by teachers.	417	_____
_____	Indicates when answers are not known.	421	_____
_____	Volunteers answers to teacher's questions.	426	_____
_____	Asks appropriate questions.	431	_____
		Total - AQ	_____

Attending Behavior - AT

_____	Looks at teacher when instructed.	439	_____
_____	Quietly watches audio-visual presentations.	444	_____
_____	Listens to class speakers.	449	_____
		Total - AT	_____

Classroom Discussion - CD

_____	Uses appropriate tone of voice in classroom discussions.	455	_____
_____	Makes relevant remarks in class discussions.	460	_____
_____	Participates in class discussions conducted by teachers.	466	_____
_____	Shares relevant items in class discussion.	471	_____
_____	Discusses contrary opinions in class discussions.	476	_____
_____	Provides reasons for opinions expressed.	481	_____
		Total - CD	_____

Completing Tasks - CT

_____	Completes assignments.	487	_____
_____	Completes assignments within required time.	492	_____
_____	Persists at tasks until completed.	497	_____
_____	Returns completed homework assignments.	505	_____
		Total - CT	_____

Follows Directions - FD

_____	Follows teacher's verbal directions.	511	_____
_____	Follows written directions.	517	_____
_____	Follows test directions.	522	_____
		Total - FD	_____

Group Activities - GA

_____	Shares materials in work activities.	527	_____
_____	Works cooperatively with a partner.	532	_____
_____	Follows plans and decisions of a group.	538	_____
_____	Accepts group's ideas that differ from his/her own.	544	_____
_____	Initiates and assists in conducting a group activity.	549	_____
		Total - GA	_____

Independent Work - IW

_____	Tries school work prior to getting help.	557	_____
_____	Uses time productively while waiting for assistance.	563	_____
_____	Finds acceptable ways to use free time.	567	_____
		Total - IW	_____

On Task Behavior - OT

_____	Sits straight at desk when required by teacher.	573	_____
_____	Does seatwork assignments quietly.	578	_____
_____	Works steadily for required time.	584	_____
_____	Ignores peer distractions when doing seatwork.	590	_____
_____	Discusses academic material with peers when appropriate.	593	_____
_____	Changes activities when requested by teacher.	597	_____
		Total - OT	_____

Performing Before Others - PF

_____	Participates in role playing.	605	_____
_____	Reads aloud in small groups.	610	_____
_____	Reads aloud before entire class.	614	_____
_____	Gives report before a small group.	617	_____
_____	Gives report to entire class.	621	_____
		Total - PF	_____

Quality of Work - QW

_____	Turns in neat papers.	627	_____
_____	Accepts corrections of school work.	631	_____
_____	Makes use of corrections to improve work.	637	_____
_____	Checks work for errors.	643	_____
		Total - QW	_____

STUDENT PROFILE

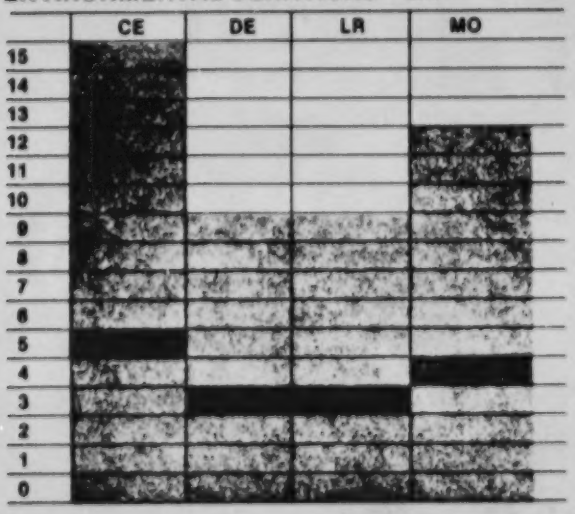
Recording Instructions

Transfer total scores from each subcategory to the appropriate profile section. These may be shown as x's. High scores denote needed instruction.

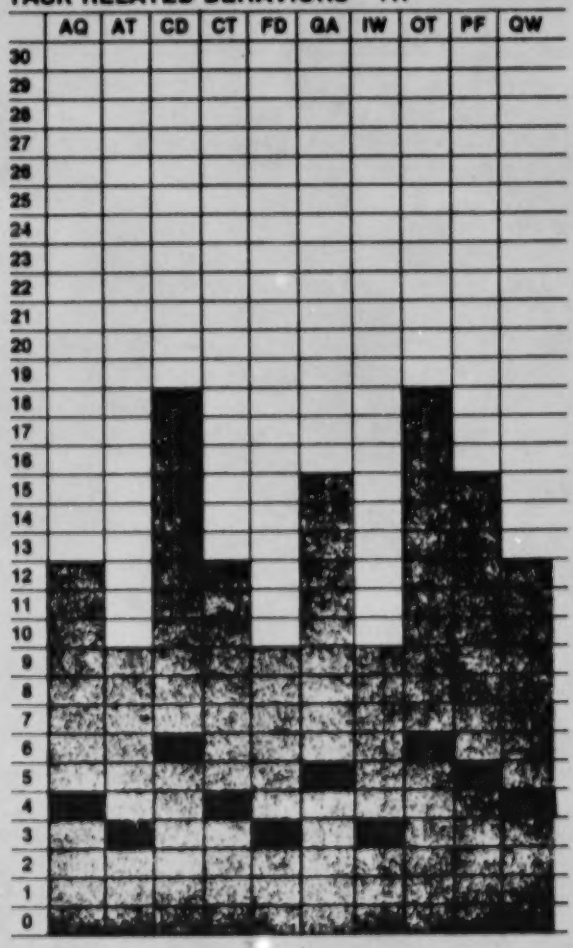
Shaded areas show possible range of scores.

Indicates behavior at an acceptable level.

ENVIRONMENTAL BEHAVIORS - ER



TASK RELATED BEHAVIORS - TR



50

SOCIAL BEHAVIOR ASSESSMENT*

Child's Name _____ Sex ☐ Female ☐ Male
Last First Middle

Parents' Name _____
Last Father Mother

Home Address _____
Street City State

Birthdate _____ Age _____
Month Day Year

Current School Grade _____

Type of Program _____

Number of Siblings at each age level

0-2 ____ 2-4 ____ 4-6 ____ 6-8 ____ 8-10 ____ 10-12 ____ 12-14 ____

14-16 ____ 16-18 ____ Above 18 ____

---

* This scale is an adaptation of the SOCIAL BEHAVIOR ASSESSMENT by Tom Stephens, Cedars Press, Inc. The adaptation was made by Pam Crouch of Iowa State University

DIRECTIONS FOR PARENT

Please rate your child's present level of performance on the scale items in the following manner:

Put a 0 in the blank by the item if you have had no opportunity to see that behavior or the item is not applicable to your child.

Example:

Reads aloud to parents __0__
0 might be given if your child cannot yet read.

Put a 1 in the blank by the item if this behavior is exhibited by your child at acceptable levels.

Example:

Uses eating utensils properly __1__
1 might be given if a preschooler uses a spoon and fork correctly.

Put a 2 in the blank by the item if this behavior is exhibited at a lower than acceptable level.

Example:

Knows and follows home rules __2__
2 might be given if your child follows rules only when reminded.

Put a 3 in the blank by the item if this behavior is never exhibited but is able to perform it.

Example:

Hangs clothes in required place __3__
3 might be given if your child is capable of hanging up clothes, but does not do it.

FOR OFFICE USE ONLY

Subject _____ Sibs _____

Age _____ Program _____

ENVIRONMENTAL BEHAVIORS - ER

Care for the Environment - CE

Disposes of trash in the proper container. ____

Drinks properly from cup or glass. ____

Cleans up after breaking or spilling something. ____

Uses household equipment and materials correctly. ____

Uses outdoor equipment safely ____

Total - CE ____

Dealing with Emergency - DE

Follows rules for emergencies. ____

Identifies accident or emergency situations which should be reported. ____

Reports accidents or other emergencies to parent. ____

Total - DE ____

Lunchroom - LR

Uses eating utensils properly. ____

Handles and eats only own food. ____

Disposes of unwanted food properly. ____

Total - LR ____

Movement Around Environment - MO

Moves with appropriate speed and care in home such as walking in kitchen when parent is cooking. ____

Enters places such as doctor's offices and takes seat without disturbing objects and others. ____

Walks with parents in stores and other public places as necessary. ____

Follows safety rules in crossing streets. ____

Total - MO ____

INTERPERSONAL BEHAVIORS - IP

Accepting Authority - AA

Complies with requests of adults who are in positions of authority. ____

Complies with requests of peers and siblings who are in positions of authority. ____

Knows and follows home rules. ____

Follows home rules in the absence of the parent. ____

Questions rules which may be unjust. ____

Total - AA ____

Coping with Conflict - CC

Responds to teasing or name-calling by ignoring, changing the subject, or some other constructive means. ____

Responds to physical assault by leaving the situation, calling for help, or some other constructive means. ____

Walks away from peers and siblings when angry to avoid hitting. ____

Refuses requests of others politely. ____

Expresses anger with non-aggressive words rather than physical action or aggressive words. ____

Handles constructively criticism or punishment perceived as undeserved. ____

Total - CC ____

Gaining Attention - GA

Gains parent's attention by appropriate means such as asking quietly. ____

Waits quietly for recognition before speaking to parents when they are busy. ____

Uses "please" and "thank you" when making requests of others. ____

Approaches parent and asks appropriately for help, explanations, instructions, and so forth. ____

Gains attention from peers and siblings in appropriate ways. ____

Asks peers and siblings for help. ____

Total - GA ____

Greeting Others - GR

Looks others in the eye when greeting them. ____

States name when asked. ____

Smiles when encountering friends or acquaintances. ____

Greets adults and peers by name. ____

Responds to an introduction by shaking hands and saying "how do you do." ____

Introduces one's self to another. ____

Introduces two people to each other. ____

Total - GR

Helping Others - HP

Helps parent when asked. ____

Helps peer or sibling when asked. ____

Gives simple directions to peers or siblings. ____

Offers help to parent. ____

Offers help to sibling. ____

Comes to defense of peer or sibling in trouble. ____

Expresses sympathy to peers or siblings about problems or difficulties. ____

Total - HP ____

Making Conversation - MC

Pays attention in a conversation to the person speaking. ____

Talks to others in a tone of voice appropriate to the situation. ____

Waits for pauses in a conversation before speaking. ____

Makes relevant remarks in a conversation with peers or siblings. ____

Makes relevant remarks in a conversation with adults including parents. ____

Ignores interruptions of others in a conversation. ____

Initiates conversation with peers or siblings in informal situations. ____

Initiates conversation with adults including parents in informal situations. ____

Total - MC ____

Organized Play - OP

Follows rules when playing games. ____

Waits turn when playing games. ____

Displays best effort in competitive games. ____

Accepts defeat and congratulates the winner in competitive games. ____

Total - OP ____

Positive Attitude Toward Others - PA

Makes positive statements about qualities and accomplishments of others. ____

Compliments others. ____

Displays tolerance for others with characteristics different from one's own. ____

Total - PA ____

Plays Informally - PL

Asks other children to play. ____

Asks to be included in a play activity in progress. ____

Shares toys and equipment in play situations. ____

Gives in to reasonable wishes of the group in play situations. ____

Suggests an activity for the group outdoors. ____

Total - PL ____

Property: Own and Others - PR

Distinguishes one's own property from that of others. ____

Lends possessions to others when asked. ____

Uses and returns other's property without damage. ____

Asks permission to use another's property. ____

Total - PR ____

SELF-RELATED BEHAVIOR - SR

Accepting Consequences - AC

Reports to parent when something has been spilled or broken. ____

Apologizes for hurting or infringing on others. ____

Accepts consequences for wrong-doing. ____

Total - AC ____

Ethical Behavior - EB

Distinguishes truth from untruth. ____

Answers when asked about wrong-doings. ____

Identifies consequences of behavior involving wrong-doing. ____

Avoids wrong-doing when encouraged by peers or siblings. ____

Total - EB ____

Expressing Feelings - EF

Describes one's own feelings or moods verbally. ____

Recognizes and labels moods of others. ____

Total - EF ____

Positive Attitude Toward Self- PA

Says "Thank you" when complimented or praised. ____

Willingly has work displayed. ____

Makes positive statements about self. ____

Undertakes new tasks with positive attitudes. ____

Total - PA ____

Responsible Behavior - RB

Attends school regularly without fuss. ____

Is ready for school on time without frequent parental prodding. ____

Hangs clothes in required place. ____

Maintains orderly room. ____

Takes care of possessions. ____

Carries messages for parent. ____

Brings required materials home from school. ____

Total - RB ____

Self-Care - SC

Uses toilet facilities properly. ____

Puts on clothes without assistance. ____

Keeps face and hands clean. ____

Total - SC ____

TASK RELATED BEHAVIORS - TR

Asking and Answering Questions - AQ

Tries to answer questions when asked by parents. ____

Indicates when answers are not known. ____

Volunteers answers to parent's or other adult's questions. ____

Total - AQ ____

Attending Behavior - AT

Looks at adult when instructed. ____

Quietly watches TV shows. ____

Listens to speakers such as in church or meetings. ____

Total - AT ____

Classroom Discussion - CD

Uses appropriate tone of voice in family discussions. ____

Makes relevant remarks in family discussions. ____

Participates in family discussions conducted by parents or siblings. ____

Shares relevant items in family discussion. ____

Discusses contrary opinions in family discussions. ____

Provides reasons for opinions expressed. ____

Total - CD ____

Completing Tasks - CT

Completes assignments or chores. ____

Completes assignments or chores within required time. ____

Persists at tasks until completed. ____

Tells parents when task is completed. ____

Total - CT ____

Follows Directions - FD

Follows parent's verbal directions. ____

Follows written directions. ____

Follows directions for use of toys, etc. ____

Total - FD ____

Group Activities - GA

Shares materials when doing tasks. ____

Works cooperatively with a peer or sibling on a task. ____

Follows plans and decisions of a group, either family or friends. ____

Initiates and assists in conducting a group activity. _____

Total - GA _____

Independent Work - IW

Tries tasks prior to getting help. _____

Uses time productively while waiting for assistance. _____

Finds acceptable ways to use free time. _____

Total - IW _____

Performing Before Others - PF

Participates in games like charades. _____

Reads aloud to parents. _____

Reads aloud to family. _____

Gives report of day's activities to family. _____

Gives report of activities to people outside of family. _____

Total - PF _____

Quality of Work - QW

Brings home neat papers. _____

Accepts corrections of work. _____

Makes use of corrections to improve work. _____

Checks work for errors. _____

Total - QW _____

Appendix B: Sample Social Skills Lessons

1. Cooperating with a work partner.
2. Initiating a conversation.
3. Homework report forms

SOCIAL SKILLS LESSON - INTERMEDIATE

Cooperating With a Work Partner

Objective: Pupils will work cooperatively with partners during class activities.

Cooperating with a work partner is exhibited when the pupil:

1. acknowledges partner with greeting appropriate to circumstance (e.g., smiles, says "good, I'm glad to work with _____, etc.).
2. shares materials with partner.
3. divides responsibilities.
4. completes agreed upon responsibilities.
5. exchanges information politely.
6. accommodates viewpoint of partner.
7. keeps to assigned task.
8. refrains from excessive off-task discussion.
9. monitors time allotted for task.

Materials: Chalkboard, poster paper, and markers.

Procedures:

Step #1. Establishing the Need

a. Read the following story:

Edward and Jill were assigned to work together on a social studies project. They were given the task of making a copy of an Indian village. Unfortunately, Jill and Edward could not work together so they never got done. Because they didn't finish, they were not allowed to participate in a class trip to see an Indian museum.

Here is how it happened:

First, Jill got angry because she didn't want a boy for a partner.
Second, when they finally got started, Ed wouldn't share his materials with Jill.
Third, they both argued and wouldn't give in. Jill wanted to make an Eastern Indian village with long houses and Ed wanted to make a Western village with teepees.

Fourth, the teacher intervened and had them make the one with teepees because it would be faster.
Fifth, Ed and Jill finally started to get along, but instead of working on the assignment, they began talking about what was on TV the night before.
Sixth, when they worked on the assignment, they didn't pay attention to the time so they never got done.

b. Ask students to tell how Ed and Jill might have gotten along better, finished the assignment, and gone on the field trip.

c. Ask pupils if they see any need to cooperate with a partner. Elicit that they will get task done faster and can get to do more interesting things.

Step #2. Identifying the Skill Components

a. Suggest to the class that if they follow the procedures listed below they will be good partners. Write the following on the chalkboard:

(1) Greet your partner pleasantly (e.g., smile, say you are glad to work with them, etc.).

(2) Share materials.

(3) Decide who does what (i.e., divide responsibility).

(4) Talk to each other about the assignment.

(5) Listen to your partner's ideas.

(6) Don't talk about other things.

(7) Keep working until done.

(8) Pay attention to the time.

Step #3. Model the Skill

a. Select one of the pupils to assist in modeling the skill. Together work on a short task and narrate the steps you are going through.

Suggested modeling activities:

(1) Making a poster where each partner has different colored markers.

(2) Making up story about the next holiday. Emphasize sharing different points of view.

b. Discuss the procedures that were followed during the modeling. Attempt to elicit from the students the whole sequence of components.

Step #4. Role Play the Skill

a. Tell students that you want them to show what good partners they can be.

b. Assign students to work together in pairs where they have to draw one picture of a building they both know. Give each pair one piece of drawing paper and give each partner half of a set of markers. Allow them 10-15 minutes to complete the task.

c. Coach students through the assignment and provide feedback on their partner relations.

Step #5. Practice

a. Plan for partnership tasks on subsequent days to ensure that the skill is reinforced.

b. Prior to assigning the partnership, review and rehearse the skill components. Ask students to recite as many of the components as possible.

c. At a skill review session, repeat the role playing task.

Step #6. Generalization

a. Consult with regular class teachers to find out when partnership activities will be taking place. Rehearse the skill components with the pupils prior to entering the integrated setting. Encourage the regular class teacher to provide intermittent reinforcement for working well with a partner.

b. Have pupils report when they worked with a partner. Ask them to recite which skill components they used and how they did. Reinforce students for self-reporting.

SOCIAL SKILLS LESSON--JUNIOR HIGH

Initiating a Conversation

Objective: Students will be able to initiate conversations with individuals whom they do not know or do not know well.

Task Analysis:

1. Student decides on a topic for a conversation.
2. The student greets another person.
3. The student makes eye contact.
4. The student makes small talk.
5. The student decides if the other person is listening.
6. The student moves on to the main topic of conversation.

Materials: Chalk board

Procedures:

Step #1. Establishing the Need

a. Ask students if there are some people that they are hesitant to talk to. Ask if they have ever wanted to talk to someone but did not know any of the people around.

b. Tell students that you have a lesson on how to start a conversation. Ask them to tell what a person should do when starting a conversation.

c. Provide students with a skill card listing the task analyzed procedures.

Step #2. Model the Skill

a. Tell students that you are going to model initiating a conversation and that you will stop and think out loud when decisions are made.

b. Identify a student to role play opposite teacher.

c. Start modeling with decision step on task analysis. Think aloud about who to start the conversation with and what the topic will be.

d. Label and demonstrate the greeting.

e. Label and demonstrate the small talk. (Note for students that there shouldn't be too much small talk.)

f. Think aloud about deciding if person is listening.

g. Label and demonstrate moving on to the topic.

h. Identify another student to play opposite the teacher and model the behavior again without thinking aloud or labeling the steps.

i. Ask students to identify the steps that were modeled.

Step #3. Role Play

a. Have the students get into groups of three and role play initiating a conversation. Each pupil is to play the role of the initiator, a receiver, and a recorder. The students are to rotate through the roles. While role playing, the students are to perform both the action and think aloud components.

b. The recorder is to check off on a skill card the steps that are performed.

c. The teacher should rotate between the groups and provide feedback on individual performances.

d. After the role playing, have students comment on how they did.

Step #4. Practice

a. Have students repeat the role playing two more times but without performing the think aloud steps.

b. Assign students three homework assignments. To complete the homework, they must fill out a homework report for starting a conversation with someone they know well, then someone they know a little, and third, with someone they have been hesitant to start a conversation with.

c. Provide feedback and reinforcement to students observed starting conversations.

Step #5. Generalization

a. Later in the school year give students the homework assignment listed above.

b. Have weekly reporting sessions where students are occasionally asked to tell about conversations they started. Reinforce the students for their ability to identify the steps they followed.

HOMEWORK REPORT FORMS

General

Name_____ **Date**_____

School_____

TO BE FILLED OUT IN SCHOOL

Skill:_____

Skill Steps:

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

TO BE FILLED OUT AT HOME

1. **Did you follow all of the steps of the skill?** ____ **yes** ____ **no**
2. **Circle any you did not follow.**
3. **What happened when you used the skill?** _____

_____

_____

_____

4. **How did you do?**

____ **good** ____ **ok**

HOMEWORK SHEET FOR INITIATING A CONVERSATION

Name_____ Date_____

School_____

1. Who did you start a conversation with? _____

_____

2. Did you:

   a. decide on what to talk about? _____ yes _____ no

   b. look the person in the eye? _____ yes _____ no

   c. make small talk? _____ yes _____ no

   d. decide if the other person is listening? _____ yes _____ no

   e. move on to the main topic of conversation? _____ yes _____ no

3. What did you talk about? _____

_____

4. How did you do? (check one)

   _____ good _____ ok _____ not too good

Appendix C: Readings

Gresham, F.M. Assessment of children's social skills. Journal of School Psychology, 1981, 19, 120-133.

Gresham, F.M. Social skills assessment as a component of mainstreaming placement decisions. Exceptional Children, 1982, 48, in press.

Gresham, F.M. Social skills training with handicapped children: A review. Review of Educational Research, 1981, 51, 139-176.

Gresham, F.M. Misguided mainstreaming: The case for social skills training with handicapped children. Exceptional Children, 1982, 48, 422-433.

Gresham, F.M. Social validity in the assessment of children's social skills: Establishing standards for social competency. Manuscript submitted for publication, 1982.

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ASSESSMENT OF CHILDREN'S SOCIAL SKILLS

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Summary: Various methods of social skills assessment with children were reviewed. Based upon an extensive review of the literature, it was found that behavioral observations, sociometrics, and teacher ratings have been the most often used methods of assessing children's social skill deficits. Advantages and disadvantages of each assessment technique were discussed within a psychometric and social validation context. Conclusions were that school psychologists should utilize all three measures to secure a comprehensive picture of children's social behavior and to obtain some measure of social validation.

Traditionally, school psychologists have spent the larger portion of their work time assessing the intellectual, academic, perceptual, and personality characteristics of children referred to them for psychoeducational evaluation. Recent emphasis on consultation (Bergan, 1977; Gallessich, 1974; Meyers, Parsons, & Martin, 1979) has expanded the school psychologist's role to other areas, but has not eliminated the school psychologist's status as the foremost expert on assessment in the school setting.

School psychologists have focused less of their attention upon the assessment of social skills in children. Within recent years, much work has been done in the area of social skills assessment with adults (Eisler, 1976; Hersen & Bellack, 1977; Hersen, Eisler, & Miller, 1973; Libet & Lewinsohn, 1973; McFall & Twentyman, 1973) and children (Asher, Singleton, Tinsley, & Hymel, 1979; Keller & Carlson, 1974; Oden & Asher, 1977; Asher & Markell, Note 1; Asher, Note 2). However, for the most part, school psychologists have not taken advantage of the recent surge of literature in the area of behavioral assessment of social skills.

The purpose of the present paper is to critically review the various methods of social skills assessment. The author will establish which methods have the strongest base of empirical support and which problems need to be resolved in order to make definitive statements about specific assessment techniques. Selections of valid and reliable social skills assessment techniques have significant ramifications for school psychologists who intervene with children lacking appropriate social skills. Since assessment and intervention are closely interrelated, particularly in behaviorally based interventions, school psychologists should be knowledgeable about those social skills assessment techniques which yield a comprehensive picture of a child's social deficits.

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IMPORTANCE OF SOCIAL SKILLS

The development of an adequate social skills repertoire is important for a variety of reasons. First, children with deficient social skills have a high incidence of school maladjustment (Gronlund & Anderson, 1963), dropping out of school (Ullman, 1957), delinquency (Roff, Sells & Golden, 1972), bad conduct discharges from military service (Roff, 1961), and adult mental health difficulties (Cowen, Pederson, Babigan, Izzo, & Trost, 1973; Kohn & Claussen, 1955; Roff, 1970). Second, a lack of social skills often differentiates between severely and mildly retarded individuals (Morris & Dolker, 1974). Third, socially unpopular children are deficient in a variety of social skills such as cooperation, communication of needs, and responding positively to peers (Gottman, Gonso, & Rasmussen, 1975; Gottman, Gonso, & Schuler, 1976; Oden & Asher, 1977). Fourth, social skill deficits are related to a high level of peer rejection in handicapped populations such as the mentally retarded (Ballard, Corman, Gottlieb, & Kaufman, 1977; Gottlieb, 1975; Gottlieb, Semmel, & Veldman, 1978; Strain, Cooke, & Apolloni, 1976; Whitman, Mercurio, & Caponigri, 1970), the learning disabled (Bruininks, 1978; Bryan, 1978), and the emotionally disturbed (Morgan, 1977; Quay, 1978). Fifth, inadequate social skills have been related to delayed cognitive development and impaired academic performance (Cartledge & Milburn, 1978; Strain, Cooke, & Apolloni, 1976). Finally, children who are deficient in social skills have been shown to exert a disruptive influence on the family system (Wahler, 1976).

Descriptive studies of childhood social withdrawal have shown that between 14% and 30% of all problem children are termed problems because they demonstrate low rates of social performance (Strain et al., 1976). Gilbert (1957) found passive or withdrawn behavior to be a presenting problem in approximately 15% of referrals on children under six years of age, and in 12% of cases of all ages, birth through 18 years. Elementary school teachers have reported social skill deficits (i.e., social isolation) as a problem in 15% of teacher referrals (Heinstein, 1969; Rogers, Lilenfield, & Pasamanick, 1955).

Collectively, the above studies suggest that social isolation represents the major presenting problem in 15% or more of the cases in which children are referred for psychological services in the schools. Social isolation also appears to be a problem in which females are represented as often as males (Asher, Oden, & Gottman, 1977; Gottman, 1977; O'Connor, 1969, 1972).

Although the 15% figure represents a relatively large number of children, it may underestimate the number of children who have deficient social skills. Many children may not be perceived by their teachers as socially isolated when, in fact, they are poorly accepted or rejected by their peers. These children may lack the necessary skills for effective social interaction (skill deficit) and exhibit high rates of aversive interaction with peers. Other children may experience a great deal of anxiety about interacting with others (performance deficit) and subsequently be neglected by their peers. Thus, socially rejected children may not represent an ostensible problem for teachers, parents, or school psychologists, but may be in need of social skills training to remediate their deficiencies in social interaction. School psychologists who are knowledgeable of social skills in assessment and remediation techniques should be able to differentially diagnose skill versus performance deficits and offer

recommendations and/or training to alleviate low levels of social performance, high rates of aversive social behavior, or social rejection by a child's peers. Social skill deficiencies exist not only in children who exhibit low rates of social interaction, but also in children who evidence high rates of aggressive/disruptive behavior or who have deficits in communication/verbal interaction skills. Social skill deficits may thus be conceptualized in various ways, depending upon the assessment used and the psychologist's selection of target social behaviors.

DEFINITION AND CONCEPTUALIZATION OF SOCIAL SKILLS

Social skills has been an elusive construct for researchers and practitioners to define. Libet and Lewinsohn (1973) have conceptualized social skills as the ability to emit behaviors that are positively or negatively reinforced and the inhibition of behaviors that are punished or extinguished by others. Some support for this definition exists in the social skills literature which suggests a correlation between giving and receiving positive social reinforcement (Charlesworth & Hartup, 1967; Hartup, Glazer, & Charlesworth, 1967; Keller & Carlson, 1974) and giving and receiving negative social reinforcement (Hartup et al., 1967; Gresham, Note 3). Hartup and Coates (1967) found strong relationships between rates of giving positive social reinforcement and positive sociometric choice and giving negative social reinforcement and negative sociometric choice. This indicates that giving and receiving positive and negative reinforcement are reciprocal social activities and are predictive of social acceptance and rejection. Similar findings have been reported by others (Strain & Shores, 1977; Strain, Shores, & Kerr, 1976; Strain & Timm, 1974; Gresham, Note 3).

Some investigators have compared frequencies of certain behaviors with measures of peer acceptance in defining social skills. Oden and Asher (1977) reported that behaviors of participation, cooperation, communication, and validation/support were exhibited more often by socially accepted than socially rejected children. Similar studies have demonstrated the discriminant validity of such behaviors as greeting, asking for and giving information, extending an offer of inclusion, effective leave taking, referential communication skills, knowledge of sex role norms, perception of another's emotions, and role-taking ability in predicting social acceptance by peers (Gottman, Gonso, & Rasmussen, 1975; Gottman, Gonso, & Schuler, 1976; Jennings, 1975). Certain behaviors appear to be predictive of peer acceptance and can be viewed in themselves as definitions of social skills. Asher and Markell (Note 1) have termed this the competence-correlates approach to the behavioral assessment of social skills.

Social skill deficits may be conceptualized along three different dimensions: (a) skill deficits, (b) performance deficits, and (c) self-control deficits. Social skill deficiences viewed as skill deficits have been remediated primarily through stimulus contiguity and associated symbolic processes. Much of the work done with preschool social isolates has been based upon this conceptualization of social skills (Evers & Schwarz, 1973; Evers-Pasquale & Sherman, 1975; Jakibchub & Smeriglio, 1976; Keller & Carlson, 1974; O'Connor, 1969, 1972). In contrast, social skill deficiencies viewed as performance deficits have been ameliorated primarily through reinforcing consequences such as contingent adult social reinforcement (Allen, Hart,

Buell, Harris, & Wolf, 1964; Buell, Stoddard, Harris, & Baer, 1968; Hart, Reynolds, Baer, Brawley, & Harris, 1968; Weinrott, Corson & Wilchesky, 1979). Finally, a lack of social skills may be viewed as self-control deficits (Kanfer, 1970; Mahoney, 1972). Self-control deficits have been remediated through a variety of techniques from the cognitive behavior modification literature and include verbal mediation training (Blackwood, 1970; Bornstein & Quevillon, 1976), relaxation training (Robin, Schneider, & Dolnick, 1976), and self-evaluation of behavior (Turkewitz, O'Leary, & Ironsmith, 1975). Children who have deficient behavioral controls which may be exhibited in high rates of aversive social behavior can be thought of as having self-control deficits in social skills (Meichenbaum, 1977).

The foregoing discussion implies that no universally accepted definition of social skills exists. The above conceptualizations of social skills (i.e., skill deficits, performance deficits, and self-control deficits) are based upon assessment of frequencies, durations, and intensities of social behaviors. Recently, there has been renewed interest in assessing social skills using sociometric measures based upon peer nominations, peer ratings, and peer rankings (Gottman, 1977; Gottman, Gonso, & Schuler 1976; Oden & Asher, 1977; Asher & Markell, Note 1; Asher, Note 2; Gresham, Note 3). These measures yield a more global picture of how children are perceived by their peers and may be as important as behavioral observations for selection and evaluation of children in social skills training programs. Teacher ratings of children's social behavior have also been the focus of recent research (Bolstad & Johnson, 1977; Greenwood, Walker, & Hops, 1977; Greenwood, Walker, Todd, & Hops, Note 4) and may constitute reliable and valid components of the assessment process. The following section will briefly review the major methods of assessment of social skills and discuss the strengths and weaknesses of each.

ASSESSMENT OF SOCIAL SKILLS

In the social skills literature, different outcome measures have been used to select children for social skills training and to evaluate the effects of intervention. Greenwood, Walker, and Hops (1977) reviewed the literature on the assessment of social withdrawal in children and found three measures which were most commonly used: (a) behavioral observations, (b) sociometric measures, and (c) teacher ratings. These three measures have also been used to assess the social skills of aggressive/disruptive children and children who possess deficits in communication or conversation skills (Gresham & Prinz, Note 5). Both behavioral observations and teacher ratings can be classified within the behavioral assessment construct system. Sociometric techniques have been around for almost 50 years and have not typically been associated with the behavioral assessment tradition. However, recent behavioral interventions with socially deficient children have employed sociometrics to select children for social skills training and to evaluate the effects of treatment.

Behavioral observations

Behavioral observations have been frequently used as selection and outcome measures in social skills training and they possess several advantages. One, many observation instruments are sensitive to treatment interventions (Strain, Cooke, & Apolloni, 1976; Strain, Shores, & Kerr, 1976). That is observational data typically

reflect real changes in behaviors under observation. Behavioral observations have been used to assess social withdrawal (Allen et al., 1964; Buell et al., 1968; Evers & Schwarz, 1973; Geller & Scheirer, 1978; Jabichub & Smeriglio, 1976; O'Connor, 1969, 1972), sharing (Rogers-Warren & Baer, 1976; Warren, Rogers-Warren, & Baer, 1976), altruism (Bryan, 1971; Harris, 1970, 1971; Masters, 1971), aggressive behavior (Forehand & King, 1977; Patterson, 1972), disruptive behavior (Iwata & Bailey, 1974; Madsen, Becker, & Thomas, 1968; Ward & Baker, 1968), and communication/verbal interaction skills (Arnold, Sturgis, & Forehand, 1977; Kifer, Lewis, Green, & Phillips, 1974; Maloney, Harper, Braukmann, Fixen, Phillips, & Wolf, 1976). All of the above studies employed specific definitions of target social behaviors and demonstrated changes in these behaviors as a function of social skills training. These studies indicate that behavioral observations are conducive to repeated measurements in single-case and group experimental designs. Repeated measurement techniques allow psychologists to monitor the daily variability of a child's social behavior and provide for the identification of antecedent and consequent conditions surrounding such behavior. For example, Quilitch and Risley (1973) found that rates of social interaction were higher when certain "social" toys were provided to preschoolers than when "nonsocial" toys were provided (antecedents). Similar assessments and manipulations of antecedent events have been conducted using an isolate's peers as initiators of social interaction (Strain, 1977) and teacher-structured activities as discriminative stimuli for interpersonal and cooperative responding (Shores, Hester, & Strain, 1976). Madsen et al. (1968) found that the combination of rules (antecedents), praise, and ignore (consequences) led to increases in rates of appropriate social behavior and decreases in rates of disruptive behavior in a classroom setting. Observations of behavior in naturalistic settings assist school psychologists in identifying antecedent and consequent determinants of social behavior which are directly related to the design of effective social skills training programs.

Recent research has focused upon the behavioral assessment of qualitative as well as quantitative aspects of social behavior. Strain, Shores, and Kerr (1976) formulated a behavioral code which employed two general classes of interactive behavior consisting of either positive or negative topographic features (qualitative features). The Strain, Shores, and Kerr code consists of motor-gestural (positive or negative) response modalities. The code not only assesses the frequency of both verbal and nonverbal aspects of children's social behavior, but assesses qualitative features as well. Similar codes have been developed by others (Hartup, Glazer, & Charlesworth, 1967; Keller & Carlson, 1974; Gresham, 1979, Note 3).Much of behavioral theory surrounding social skills training is based upon the notion of social reciprocity. Translation of the reciprocity notion into remedial strategies requires an observational system that can accurately assess not only the quantitative contributions of each interactant, but also the qualitative effects (positive or negative) that these social interactions have in social exchanges (Strain & Shores, 1977). For instance, Gresham (Note 3) found moderate correlations between rates of giving and receiving positive reinforcement (r = .57) and receiving negative reinforcement (r = .53) suggesting that these were reciprocal activities.

Behavioral observations also have distinct disadvantages as an assessment method in evaluating social skills. Naturalistic observation of behavior may be subject to observer bias, drift, cheating, and sources of bias in combination (Johnson &

Bolstad, 1973; Kent & Foster, 1977). Another problem with observational data is that changes in behavioral rates may not always be indicative of significant changes in levels of social skills. Increasing or decreasing rates of social behavior without considering the social validity of these changes does not necessarily ensure peer acceptance (Gottman, 1977; Gottman, Gonso, & Rasmussen, 1975). Target social behaviors have traditionally lacked social validation by significant others (i.e., judges such as teachers, parents, etc.) regarding their relative significance (Minkin, Braukmann, Minkin, Timbers, Timbers, Fixen, Phillips, & Wolf, 1976). Critics of behavioral observations maintain that these measures offer either a too narrow conceptualization of social skills or that they typically do not reflect the most important aspects of social behavior (Asher, Singleton, Tinsley, & Hymel, 1979; Gottman, 1977; Asher & Markell, Note 1; Asher, Note 2). Finally, while behavioral observations appear to have a certain kind of face validity, little empirical evidence exists regarding their long-term predictive validity. Unlike sociometric measures, low rates of social interaction have not been shown to be predictive of adult mental health difficulty or academic failure (Gottman, 1977). Moreover, few well-controlled studies have been conducted to evaluate the concurrent validity of observational codes used in assessing social skills in children (Hartup & Coates, 1967; Hartup, Glaser & Charlesworth, 1967; Gresham, Note 3).

In summary, behavioral observations have been frequently used in assessing social skills because of their sensitivity, nonreactivity, and specificity regarding antecedents and consequences of social interaction. Although these advantages are evident, their disadvantages such as lack of predictive and concurrent validity, proclivity toward observer bias and drift, and lack of social validation makes them less than optimal as sole indices of social skills.

Sociometric measures

Some researchers have questioned both the validity and reliability of behavioral observations in selecting children for social skills training and evaluating outcomes of treatment (Gottman, 1977; Gottman, Gonso, & Rasmussen, 1975; Oden & Asher, 1977; Asher & Markell, Note 1; Asher, Note 2). For example, Gottman (1977) asserts that there are two entirely separate literatures concerning social skills training with children. One body of data defines social skill deficits as low rates of social interaction which restricts the child's opportunity for learning appropriate social behavior (Allen et al., 1964); Buell et al., 1968; Evers & Schwarz, 1973; O'Connor, 1969, 1972). The other body of literature defines social skill deficiencies in terms of low levels of peer acceptance or high levels of peer rejection as measured by sociometric techniques (Asher, Singleton, Tinsley, & Hymel, 1979; Gottman, Gonso, & Rasmussen, 1975; Gottman, Gonso & Schuler, 1976; Oden & Asher, 1977; Asher, Note 2; Gresham, Note 3).

Sociometric techniques were developed by Moreno (1934) who used peer nomination methods to assess children's friendship patterns. Children were asked to nominate a certain number of classmates according to several criteria (e.g., best friends, play partners, seat partners, etc.). Although peer nomination measures have enjoyed a long and useful history in school settings, their sensitivity may be inadequate for use as selection and outcome measures in social skills intervention. Since children can only nominate a specified number of classmates (usually three),

unselected children may not have deficits in social skills but would be labeled as false positives. Moreover, since most scores on nomination measures can only range from 0 to 3 (i.e., prespecified number), this restricted range diminishes their sensitivity and utility as outcome measures in social skills training. Peer nomination measures may be more useful for preschool populations since these children's friendships are not well established (Asher & Markell, Note 1). However, nomination measures are contraindicated for use with older children (9- and 10-year-olds), since their friendships tend to be more stable (Asher, Oden, & Gottman, 1977) and these measures have failed to detect changes in status after treatment (Oden & Asher, 1977; Gresham, Note 5).

Peer rating scale sociometrics have recently become more widespread and enjoy several advantages over peer nomination measures. With peer ratings scales, children rate each classmate according to a specified criterion (e.g., play partner, work partner, etc.) on a 5-point Likert-type scale (Oden & Asher, 1977; Roistacher, 1974; Asher & Markell, Note 1; Asher, Note 2; Gresham, Note 3). A child's score is the average of the ratings he/she receives from peers. Usually, older children's scores (9-and 10-year-olds) are based upon same-sex ratings since there is sometimes considerable sex bias in sociometric ratings (Singleton & Asher, 1977). Recent work with preschool social isolates (Asher & Markell, Note 1) revealed no sex bias in their ratings of cross-sex peers.

The rating-scale sociometric possesses several advantages over the traditional nomination method. One, it provides an indication of the feelings of each child toward every other child in the group. With nomination measures, it is unclear what a child's failure to nominate another child means (dislike or momentary forgetting). Second, peer ratings are sensitive to changes in scale criteria. Singleton and Asher (1977) found that white children rated black classmates higher on a "play with" than a "work with" rating scale. Other investigations (Oden & Asher, 1977; Gresham, Note 3) have found that training low-accepted children in play skills led to greater increases in children's ratings by peers in response to the "play with" question than in response to the "work with" question.

A third advantage of peer ratings is that they tend to be more reliable than peer nominations. Oden and Asher (1977) found a test-retest correlation for third- and fourth-grade children of .82 for the "play with" scale, .84 for the "work with" scale, and .62 for a "best friend" nomination measure. Asher, Singleton, Tinsley, & Hymel (1979) found a stability coefficient of .81 for a "play with" rating scale compared to .56 for a nomination measure. Similar findings have been reported by others (Asher, Singleton, & Tinsley, 1977; Gresham, Note 3). The greater stability of scores with the rating scale method is probably due to the fact that a child's score is the average of ratings from a number of peers. If one rater changes their perception of the target child from one time to the next, the target child's score is not greatly affected. Also, the rating scale sociometric produces more variability in scores (since all children are rated), which potentiates the size of the correlation coefficient (Hays, 1973).

Sociometric data also have disadvantages as selection and outcome measures in social skills training programs. First, they may become reactive if used on a regular basis, which limits their use in a single-subject and time-series designs. Second, sociometrics provide limited diagnostic information concerning the exact nature and source of interpersonal difficulty. A child may be poorly accepted by peers but the sociometric will not provide data concerning the antecedents and/or consequences

of low peer acceptance. Finally, changes in sociometric status due to regression, maturation, experimental mortality, interactive effects, and other threats to the internal validity of research designs may invalidate findings derived from sociometric indices. While sociometric measures offer additional information concerning children in need of social skills training above and beyond that which is yielded by behavioral observations, total reliance upon sociometrics is ill advised for assessment and evaluation purposes.

Teacher ratings

Teacher ratings of children's social behavior in the classroom setting have traditionally provided the primary basis of referral to school special service personnel for evaluation and/or treatment (Strain, Cooke, & Apolloni, 1976). Only recently have researchers begun to examine the empirical accuracy and efficiency of teacher ratings in social skills assessment. Teacher ratings of social skills have been validated against behavioral observations as well as sociometric data and appear to be more accurate indicators of children's social behavior than was previously thought (Greenwood et al., 1977).

Bolstad and Johnson (1977) examined the relationship between the description teachers gave of their students and the students' actual classroom behavior. Teachers were asked to select boy and girl pairs whom they would label as "best behaved," "average behaved," and "least well-behaved." There was a high degree of concordance between teachers' ratings and behavioral observation data. Similarly, Greenwood, Walker, Todd, and Hops (Note 4) found that teacher rankings of socially unresponsive students were more predictive of rates of interaction than age, sex, previous school experience, class size, or a behavioral rating scale.

Although there is a dearth of research concerning teacher ratings of social skills, it appears that these ratings constitute useful information for school psychologists in their assessment of social skills. Preliminary data suggest that teachers can make accurate discriminations between students in evaluating their social behavior and may serve as reliable referral sources for children in need of social skills training. Unfortunately, much of the work investigating teacher ratings of social behavior as corroborated by interaction rates or sociometrics remains unpublished (Greenwood, Walker, Todd, & Hops, Note 4; Walker, Hops, Greenwood, & Todd, Note 6; Walker, Greenwood, Hops, & Todd, Note 7; Hops, Walker & Greenwood, Note 8; Hops & Beickel, Note 9). It appears at this time that teacher ratings constitute valid and economic screening measures of social skills deficits, but their utility as outcome measures in social skills training remains to be demonstrated.

SUMMARY AND CONCLUSION

Assessment and training of social skills with children have only recently piqued the interest of psychologists. As mentioned in the introduction, school psychologists have generally not seized upon the burgeoning body of research available in social skills training with children. This is evidenced by the paucity of social skills assessment and intervention studies published recently in the three major journals serving the field of school psychology (i.e., *Journal of School Psychology, Psychology in the Schools,* and *School Psychology Digest).*

In assessing the social skills of children, school psychologists should be aware of the close correspondence between assessment and intervention. Generally speaking, advancements in the assessment of social skills have not kept pace with the advancements in social skill training techniques. This lack of clear assessment has encumbered our understanding of the nature of social skills as well as the planning and evaluation of treatment.

The recent disputes between behavioral assessment and sociometric assessment proponents have done much to clarify the nature of social skills deficits. Research by both camps has highlighted certain technical and methodological issues which have plagued past efforts in establishing valid and reliable assessment of children's social skills. As a result of these two lines of research, the conceptualization of social skills as a multifaceted construct has evolved (Gottman, 1977). Until recently, however, no attempts have been made to integrate the two literatures on social skills assessment and training with children. Behavioral assessment advocates have patently excluded sociometric criteria and sociometric proponents have excluded precise measures of social behavior in naturalistic settings as indices of change in social skills training. In an effort to unite these two literatures, Gresham (Note 3) used three peer nomination measures, three peer rating scales, and four categories of behavioral observations (giving and receiving positive and negative reinforcement) as outcome measures in a social skills training program with 9- and 10-year-old children. Gresham's data showed changes in both sociometric and observational data as a function of treatment (e.g., modeling and coaching). Moreover, there were significant correlations between behavioral rates of giving and receiving positive reinforcement and sociometric choices as well as significant inverse correlations between rates of giving and receiving negative reinforcement and sociometric choice. These data bring into question Gottman's (1977) assertion that social skills are multifaceted rather than unitary constructs.

In summary, it appears that a comprehensive assessment of a child's social skills should include precise observations of social behavior in a variety of naturalistic settings, sociometric measures, and teacher ratings or rankings of a child's social behavior in the school setting. By utilizing all three measures, school psychologists should be able to identify specific areas of social skills deficits as well as secure peers' and teachers' perceptions of the target child's social behavior. Securing peers' and teachers' perceptions of a child's social behavior represents a form of social validation. Since social behavior is a collection of relatively complex behaviors, school psychologists should establish the "social validity" of these observed behaviors as a means of verifying both the severity of the problem behavior and the benefits of his/her intervention procedures (Minkin et al., 1976). Moreover, there is little available research regarding the development and use of self-report of role-playing measures in assessing children's social skills (Vogrin & Kassinove, 1979). This appears to be a prospective area of research which merits attention.

While much has been done in the realm of assessment and training of social skills, school psychologists are in a primary position to further knowledge in this area through research and practice. Hopefully, this review will provide school psychologists with an adequate research base against which to evaluate their selections of appropriate social skill assessment techniques and will stimulate additional research in this area.

REFERENCES

Allen, K.E., Hart, B.M., Buell, J.S., Harris, F.R., & Wolf, M.M. Effects of social reinforcement on isolate behavior of a nursery school child. *Child Development*, 1964, *35*, 511-518.

Arnold, S., Sturgis, E., & Forehand, R. Training a parent to teach communication skills: A case study. *Behavior Modification*, 1977, *1*(2), 259-276.

Asher, S.R., & Markell, R.S. Peer relations and social interaction: Assessment and intervention. Unpublished manuscript, University of Illinois, 1978.

Asher, S.R., Oden, S.L., & Gottman, J.M. Children's friendships in school settings. In L.G. Katz (Ed.), *Current topics in early childhood education* (Vol. 1) Hillsdale, New Jersey: Erlbaum, 1977.

Asher, S.R., Singleton, L.C., Tinsley, B.R., & Hymel, S. A reliable sociometric measure for preschool children. *Developmental Psychology*, 1979, *15*, 443-444.

Ballard, M., Corman, L., Gottlieb, J., & Kaufman, M.J. Improving the social status of mainstreamed retarded children. *Journal of Educational Psychology*, 1977, *69*, 605-611.

Bergan, J.R. *Behavioral consultation*. Columbus, Ohio: Charles E. Merrill, 1977.

Blackwood, R.O. The operant conditioning of verbal mediated self-control in the classroom. *Journal of School Psychology*, 1970, *8*, 251-258.

Bolstad, O.D., & Johnson, S.M. The relationship between teacher's assessment of students and students' actual behavior in the classroom. *Child Development*, 1977, *48*, 570-578.

Bornstein, P.H., & Quevillon, R.P. The effects of a self-instructional package on overactive preschool boys. *Journal of Applied Behavior Analysis*, 1976, *9*, 179-188.

Bornstein, M.R., Bellack, A.S., & Hersen, M. Social skills training for unassertive children: A multiple baseline analysis. *Journal of Applied Behavior Analysis*, 1977, *10*, 183-195.

Bruininks, V.L. Actual and perceived peer status of learning-disabled students in mainstream programs. *Journal of Special Education*, 1978, *12*, 51-58.

Bryan, J.H. Model affect and children's imitative behavior. *Child Development*, 1971, *42*, 2061-2065.

Bryan, T.H. Social relationships and verbal interactions of learning disabled children. *Journal of Learning Disabilities*, 1978, *11*, 107-115.

Buell, J., Stoddard, P. Harris, F., & Baer, D.M. Collateral social development accompanying reinforcement of outdoor play in a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 167-173.

Camp, B.W., Blom, G.E., Hebert, F., & van Doorninck, W.J. *"Think Aloud": A program for developing self-control in young aggressive boys*. *Journal of Abnormal Child Psychology*, 1977, *5*, 157-169.

Cartledge, G., & Milburn, J.F. The case for teaching social skills in the classroom: A review. *Review of Educational Research*, 1978, *48*, 133-156.

Charlesworth, R. & Hartup, W.W. Positive social reinforcement in the nursery school peer group. *Child Development*, 1967, *38*, 993-1002.

Cowen, E.L., Pederson, A., Babigan, H., Izzo, L.D., & Trost, M.A. Long-term follow-up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology*, 1973, *41*, 438-446.

Eisler, R.M. Behavioral assessment of socil skills, In M. Hersen and A. Bellack (Eds.), *Behavioral assessment: A practical handbook*. New York: Pergamon Press, 1976, 369-393.

Evers, W.L., & Schwarz, J.C. Modifying social withdrawal in preschoolers: The effects of filmed modeling and teacher praise. *Journal of Abnormal Child Psychology*, 1973, *1*, 248-256.

Evers-Pasquale, W., & Sherman, M. The reward value of peers: A variable influencing the efficacy of filmed modeling in modifying social isolation in preschoolers. *Journal of Abnormal Child Psychology*, 1975, *3*, 179-189.

Forehand, R., & King, H.E. Noncompliant children: Effects of parent training on behavior and attitude change. *Behavior Modification*, 1977, *1*, 93-108.

Gallessich, J. Training the school psychologist for consultation. *Journal of School Psychology*, 1974, *12*, 138-149.

Geller, M.I., & Scheirer, C.J. The effect of filmed modeling on cooperative play in disadvantaged preschoolers. *Journal of Abnormal Psychology*, 1978, *6*, 71-87.

Gilbert, G.M. A survey of "referral problems" in metropolitan child guidance centers. *Journal of Clinical Psychology*, 1957, *13*, 37-42.

Gottlieb, J. Attitudes toward retarded children: Effects of labeling and behavioral agressiveness. *Journal of Educational Psychology*, 1975, *67*, 581-585.

Gottlieb, J., Semmel, M.I., & Veldman, D.J. Correlates of social status among mainstreamed mentally retarded children. *Journal of Educational Psychology*, 1978, *70*, 396-405.

Gottman, J.M. Toward a definition of social isolation in children. *Child Development*, 1977, *48*, 513-517.

Gottman, J., Gonso, J., & Rasmussen, B. Social interaction, social competence, and friendship in children. *Child Development*, 1975, *46*, 709-718.

Gottman, J., Gonso, J., & Schuler, P. Teaching social skills to isolated children. *Journal of Abnormal Child Psychology*, 1976, *4*, 179-197.

Greenwood, C.R., Walker, H.M., & Hops, H. Issues in social interaction/withdrawal assessment. *Exceptional Children*, 1977, *43*, 490-499.

Gresham, F.M. *Social skills training with children: Responsiveness to modeling and coaching as a function of peer orientation*. Unpublished doctoral dissertation, University of South Carolina, 1979.

Gresham, F.M. & Prinz, R.J. *Social skills training with children*. Manuscript in preparation, 1979.

Gronlund, H., Anderson, L. Personality characteristics of socially accepted, socially neglected, and socially rejected junior high school pupils. In J. Seiderman (Ed.), *Educating for mental health*. New York: Crowell, 1963.

Harris, M.B. Reciprocity and generosity: Some determinants of sharing behavior. *Child Development*, 1970, *41*, 313-328.

Harris, M.B. Models, norms, and sharing. *Psychological Reports*, 1971, *29*, 147-153.

Hart, B.M., Reynolds, N.J., Baer, D.M., Brawley, E.R., & Harris, F.R. Effects of contingent and noncontingent social reinforcement on the cooperative play of a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 73-78.

Hartup, W.W., Glazer, J.A., & Charlesworth, R. Peer reinforcement and sociometric status. *Child Development*, 1967, *38*, 1017-1024.

Hartup, W.W., & Coates, B. Imitation of a peer as a function of reinforcement form the peer group and rewardingness of the model. *Child Development*, 1967, *38*, 1003-1016.

Hays, W.L. *Statistics for the social sciences*. New York: Holt, Rinehart, & Winston, 1973.

Heinstein, M. *Behavior problems of young children in California*. Berkeley, California: Bureau of Maternal and Child Health, 1969.

Hersen, M. & Bellack, A.S. Assessment of social skills. In A.R. Ciminero, K.S. Calhoun, and H.E. Adams (Eds.), *Handbook of behavioral assessment*. New York: Wiley, 1977, 509-554.

Hersen, M., Eisler, R.M., & Miller, P.M. Development of assertive responses: Clinical measurement and research considerations. *Behavior Research and Therapy*, 1973, *11*, 505-521.

Iwata, B.A., & Bailey, J.S. Reward versus cost token system: An analysis of the effects on students and teacher. *Journal of Applied Behavior Analysis*, 1974, *7*, 567-576.

Jakibchub, Z., & Smeriglio, V.L. The influence of symbolic modeling on the social behavior of preschool children with low levels of social responsiveness. *Child Development*, 1976, *47*, 838-841.

Jennings, K.D. People versus object orientation, social behavior, and intellectual abilities in children. *Developmental Psychology*, 1975, *11*, 511-519.

Johnson, S.M., & Bolstad, O.D. Methodological issues in naturalistic observation: Some problems and solutions for field research. In L.A. Hamerlynck, L.C. Handy, and E.J. Mash (Eds.). *Behavior change: methodology, concepts, and practice*. Champaign, Illinois: Research Press, 1973.

Kanfer, F.H. Self-regulation: Research, issues, and speculations. In C. Neuringer & J.L. Michael (Eds.), *Behavior modification in clinical psychology*. New York: Appleton-Century-Crofts, 1970, 178-220.

Keller, M.F., & Carlson, P.M. The use of symbolic modeling to promote social skills in preschool children with low levels of social responsiveness. *Child Development*, 1974, *45*, 912-919.

Kent, R.N., & Foster, S.L. Direct observational procedures: Methodological issues in naturalistic settings. In A. Cimenero, K. Calhoun, and H. Adams (Eds.), *Handbook of behavioral assessment*. New York: John Wiley, 1977, 279-328.

Kifer, R.E., Lewis, M.A., Green, D.R., & Phillips, E.L. Training predelinquent youths and their parents to negotiate conflict situations. *Journal of Applied Behavior Analysis*, 1974, *7*, 357-364.

Kirby, F.D., & Toler, H.C. Modification of preschool isolate behavior: A case study. *Journal of Applied Behavior Analysis*, 1970, *3*, 309-314.

Kohn, M., & Clausen, J. Social isolation and schizophrenia. *American Sociological Review*, 1955, *20*, 265-273.

Libet, J.M., & Lewinsohn, P.M. Concept of social skill with special reference to the behavior of depressed persons. *Journal of Consulting and Clinical Psychology*, 1973, *40*, 301-312.

Madsen, C.H., Becker, W.C., & Thomas, D.R. Rules, praise, and ignoring: Elements of elementary classroom control. *Journal of Applied Behavior Analysis*, 1968, *1*, 139-150.

Mahoney, M.J. Research issues in self-management. *Behavior Therapy*, 1972, *3*, 45-63.

Maloney, D.M., Harper, T.M., Braukmann, C.J., Fixen, D.L., Phillips, E.L., & Wolf, M.M. Teaching conversation-related skills to prelinquent girls. *Journal of Applied Behavior Analysis*, 1976, *9*, 371.

Masters, J.C. Effects of social comparison upon children's self-reinforcement and altruism toward competitors and friends. *Developmental Psychology*, 1971, *5*, 64-72.

Meichenbaum, D.H. *Cognitive-behavior modification: An integrative approach*. New York: Plenum Press, 1977.

Meyers, J., Parsons, R.D., & Martin, R. *Mental health consultation in the schools*. San Francisco: Jossey-Bass, 1979.

McFall, R.M., & Twentyman, C.T. Four experiments on the relative contributions of rehearsal, modeling, and coaching to assertion training. *Journal of Abnormal Psychology*, 1973, *31*, 199-218.

Minkin, N., Braukmann, C.J., Minkin, B.L., Timbers, G.D., Timbers, B.J., Fixen, D.L., Phillips, E.L. & Wolf, M.M. The social validation and training of conversation skills. *Journal of Applied Behavior Analysis*, 1976, *9*, 127-139.

Moreno, J.L. Who shall survive? *Nervous and Mental Disease Monograph No. 58*. Washington, D.C., 1934.

Morgan, S.R. A descriptive analysis of maladjusted behavior in socially rejected children. *Behavioral Disorders*, 1977, *3*, 23-30.

Morris, R.J., & Dolker, M. Developing cooperative play in socially rejected retarded children. *Mental Retardation*, 1974, *12*, 24-27.

Oden, S., & Asher, S.R. Coaching children in social skills for friendship making. *Child Development*, 1977, *48*, 495-506.

O'Connor, R.D. Modification of social withdrawal through symbolic modeling. *Journal of Applied Behavior Analysis*, 1969, *2*, 15-22.

O'Connor, R.D. Relative effects of modeling, shaping, and the combined procedures for modification of social withdrawal. *Journal of Abnormal Psychology*, 1972, *79*, 327-334.

Patterson, R.L. Time-out and assertive training for a dependent child. *Behavior Therapy*, 1972, *3*, 466-468.

Polirstok, S.R., & Greer, R.D. Remediation of mutually aversive interactions between a problem student and four teachers by training the student in reinforcement techniques. *Journal of Applied Behavior Analysis*, 1977, *10*, 707-716.

Quay, H.C. Behavior disorders in the classroom. *Journal of Research and Development in Education*, 1978, 8-17.

Quilitch, H.R., & Risley, T.R. The effects of play materials on social play. *Journal of Applied Behavior Analysis*, 1973, *6*, 573-578.

Robin, A., Schneider, M., & Dolnick, M. The turtle technique: An extended case study of self-control in the classroom. *Psychology in the Schools*, 1976, *13*, 449-453.

Roff, M. Childhood social interactions and young adult bad conduct. *Journal of Abnormal Psychology*, 1961, *63*, 333-337.

Roff, M. Some life history factors in relation to various types of adult maladjustment. In M. Ross and D. Ricks (Eds.), *Life history research in psychopathology*. Minneapolis: University of Minnesota Press, 1970.

Roff, M., Sells, B., & Golden, M. *Social adjustment and personality development in children*. Minneapolis: University of Minnesota Press, 1972.

Rogers, M.E., Lilenfield, A.M. & Pasamanick, B. *Prenatal and perinatal factors in the development of childhood behavior disorders*. Baltimore: Johns Hopkins University Press, 1955.

Rogers-Warren, A., Warren, S.F., & Baer, D.A. A competent analysis: Modeling, self-reporting, and reinforcement in the development of sharing. *Behavior Modification*, 1977, *1*, 307-321.

Rogers-Warren, A., & Baer, D.M. Correspondence between saying and doing: Teaching children to share and praise. *Journal of Applied Behavior Analysis*, 1976, *9*, 334-354.

Roistacher, R.C. A microeconomic model of sociometric choice. *Sociometry*, 1974, *37*, 219-238.

Sachs, D.A. The efficacy of time-out procedures in a variety of behavior problems. *Journal of Behavior Therapy and Experimental Psychiatry*, 1973, *4*, 237-242.

Shores, R.E., Hester, P., & Strain, P.S. Effects of amount and type of teacher-child or child-child interaction during free play. *Psychology in the Schools*, 1976, *13*, 171-175.

Singleton, L.C., & Asher, S.R. Peer preferences and social interaction amont third-grade children in an integrated school district. *Journal of educational Psychology*, 1977, *69*, 330-336.

Strain, P.S., & Timm, M.S. An experimental analysis of social interaction between a behaviorally disordered preschool child and her classroom peers. *Journal of Applied Behavior Analysis*, 1974, *7*, 583-590.

Strain, P.S. An exprimental analysis of peer social initiations on the behavior of withdrawn preschool children: Some training and generalization effects. *Journal of Abnormal Child Psychology*, 1977, *5*, 445-455.

Strain, P.W., Shores, R.E., & Kerr, M.M. An experimental analysis of "spillover" effects on the social interaction of behaviorally handicapped preschool children. *Journal of Applied Behavior Analysis*, 1976, *9*, 31-40.

Strain, P.S., Cooke, T.P., & Apolloni, T. Teaching exceptional children: *Assessing and modifying social behavior*. New York: Academic Press, 1976.

Strain, P.S., & Shores, R.E. Social reciprocity: A review of research and educational implications. *Exceptional Children*, 1977, *43*, 526-530.

Strain, P.S., Shores, R.E., Timm, M.A. Effects of peer social initiations on the behavior of withdrawn preschool children. *Journal of Applied Behavior Analysis*, 1977, *10*, 289-298.

Turkewitz, H., O'Leary, K.D., & Ironsmith, M. Producing generalization of appropriate behavior through self-control. *Journal of Consulting and Clinical Psychology*, 1975, *43*, 577-583.

Ullman, C.A. Teachers, peers, and tests as predictors of adjustment. *Journal of Educational Psychology*, 1957, *48*, 257-267.

Vogrin, D. & Kassinove, H. Effects of behavior rehearsal, audiotaped observation, and intelligence on assertiveness and adjustment in third-grade children. *Psychology in the Schools*, 1979, *16*, 422-429.

Wahler, R.G. Deviant child behavior within the family: Development of speculations and behavior change strategies. In H.E. Leitenberg (Ed.), *Handbook of behavior modification and behavior therapy*. Englewood Cliffs, N.J.: Prentice-Hall, 1976, 516-543.

Walker, H., & Buckley, N. The use of positive reinvorcement in conditioning attending behavior. *Journal of Applied Behavior Analysis*, 1968, *1*, 245-252.

Ward, M.H., & Baker, B.L. Reinforcement therapy in the classroom. *Journal of Applied Behavior Analysis*, 1968, *1*, 323-328.

Warren, S.F., Rogers-Warren, A., & Baer, D.M. The role of offer rates in controlling sharing by young children. *Journal of Applied Behavior Analysis*, 1976, *9*, 491-497.

Weinrott, M.R., Corson, J.A., & Wilchesky, M. Teacher-mediated treatment of social withdrawal. *Behavior Therapy*, 1979, *10*, 281-294.

Whitman, T.L., Mercurio, J.R., & Caponigri, V. Development of social responses in two severely retarded children. *Journal of Applied Behavior Analysis*, 1970, *3*, 133-139.

Zeilberger, J., Sampsen, S.E., & Sloane, H.H., Jr. Modification of a child's problem behaviors in the home with the mother as therapist. *Journal of Applied Behavior Analysis*, 1968, *1*, 47-53.

Zimmerman, B.J., & Brody, G.H. Race and modeling influences on the interpersonal play patterns, of boys. *Journal of Educational Psychology*, 1975, *87*, 591-598.

Social Skills Assessment as a Component of Mainstreaming Placement Decisions

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Running head: Social skill and mainstreamed placement

Abstract

The use of social skills measures as a component of multi-factored assessment in making mainstreamed placement decisions is recommended. Conventional assessment information such as IQ and academic achievement functioning levels are typically weighed most heavily in making placement decisions. It is suggested that social skills information may be more important in making a decision to mainstream than IQ or achievement. Increased involvement of both regular and special education teachers as well as parents in the assessment process is emphasized.

Social Skill Assessment as a Component of Mainstreaming Placement Decisions

Conventional assessment practices for special education classification and placement decisions have been based largely upon measures of intellectual functioning (Binet or WISC-R), academic achievement (WRAT or PIAT), and perceptual-motor skills (Bender Gestalt or Frostig). The usefulness and fairness of conventional assessment practices in special education have been questioned in recent years (Mercer, 1979; Salvia & Ysseldyke, 1978). Pursuant to these and other criticisms, federal legislation has mandated a broadened scope of assessment information by requiring multifactored assessment conducted by a multidisciplinary team (Federal Register, 1977, p. 42496-42497).

Although multifactored assessment is now required, the fact still remains that traditional measures of school functioning such as IQ and academic achievement are weighed most heavily in making special education classification and placement decisions (Salvia & Ysseldyke, 1978). Moreover, assessment personnel such as school psychologists typically have higher participation rates in placement team meetings than do special and regular education teachers (Yoshida, 1980; Yoshida, Fenton, Maxwell, & Kaufman, 1978). These participation rates are exemplified by behaviors such as contributing and interpreting assessment information, proposing and evaluating placement alternatives, and finalizing placement decisions. Regular and special education teachers, pivotal persons in implementing mainstreaming decisions, typically participate at low levels in placement meetings and are generally not satisfied with the placement team process (Yoshida et al., 1978).

Placement of handicapped learners into mainstreamed settings requires regular education teachers to assume primary responsibility for these integrated children. As such, both regular and special eduation teachers should play a larger role in the assessment and placement process. These placement decisions are perhaps better made on the basis of a child's ability to get along socially with peers and teachers in the regular classroom than on the basis of conventional assessment information such as intellectual and achievement functioning levels.

The purpose of the current paper is to present evidence regarding the importance of a handicapped child's level of social skill in guiding mainstreaming placement decisions. A conceptualization and definition of social skill is presented along with a brief overview of social skills assessment. Finally, suggestions are made in which special and regular education teachers can take an active role in the assessment of handicapped children's social skills. By being directly involved in the assessment process, special and regular education teachers should exhibit an increased level of participation in and satisfaction with multidisciplinary team decisions regarding mainstreamed placements.

Conceptualization of Social Skill

Social skills may be conceptualized as part of a broader construct known as social competence. Social competence includes both social skills and adaptive behavior competencies which are crucial areas of development for school-age children (Reschly & Gresham, Note 1). Whereas adaptive behavior tends to focus more upon self-sufficiency and independent functioning, social skills are usually conceptualized more in terms of interpersonal functioning and social acceptance (Gresham, 1981a).

Foster and Richey (1979) have defined social skills as: " . . . those responses, which within a given situation, prove effective, or in other words, maximize the probability of producing, maintaining, or enhancing positive effects for the interactor." p. 626. These positive effects may be positive social interactions, friendships, and/or overall acceptance in the peer group to name just a few. Handicapped children have been shown to be notably deficient in social skills (Gresham, 1981b). The relationship between these social skill deficiencies and mainstreaming decisions are discussed next.

Social Skills and Mainstreaming

Proponents of mainstreaming have argued that integrating handicapped children into regular classrooms will result in at least three positive outcomes: 1) there will be increased social interaction between handicapped and nonhandicapped children, 2) handicapped children will be better accepted by their non-handicapped peers, and 3) handicapped children will model or imitate the behavior of their nonhandicapped peers as a result of increased exposure to them.

Gresham (1981b) reviewed 40 studies dealing with the social skills of mainstreamed handicapped children and found that: a) mainstreamed handicapped children interact less and more negatively with nonhandicapped children, b) mainstreamed handicapped children are poorly accepted by their nonhandicapped peers, and c) mainstreamed handicapped children do not model the behaviors of nonhandicapped peers as a result of increased exposure to them.

Given these negative outcomes of mainstreaming, Gresham (1981b) suggests that mainstreaming efforts have been misguided because handicapped children

have been placed into regular classrooms without the requisite social skills crucial for peer acceptance. In this sense, many mainstreamed handicapped children are placed into more restrictive social environments because they are often debased by their peers, socially isolated, and/or poorly accepted. Moreover, once placed, provisions are not usually made in the regular classroom to train social skills (Cartledge & Milburn, 1978). The level of a handicapped child's social skills can and should be used to determine the least restrictive social environment for individual handicapped children. The following section describes the state of social skills assessment technology, which can be drawn upon in assessing handicapped children's social skills.

Social Skills Assessment

The assessment of children's social skills has received considerable attention in recent years (Asher & Hymel, 1981; Asher & Taylor, 1981; Greenwood, Walker, & Hops, 1977; Gresham, 1981c). In reviewing the literature on the assessment of children's social skills, Gresham (1981c) found that the most frequently used measures were naturalistic observations, sociometric measures, and teacher ratings. A multifactored assessment of a handicapped child's social skills would involve using all three types of measures. Assessment should be conducted by more than one informant and across a variety of situations to ensure valid results. The purpose of multifactored assessment is not unlike the notion of convergent validity in which one looks for agreement or convergence between dissimilar methods of measuring the same trait (Campbell & Fiske, 1959). A brief review of social skills assessment techniques will be presented next.

Naturalistic observations. Observations of a child's social behavior

in the natural environment (classrooms, playground, cafeteria, etc.) is perhaps the most face valid method of assessing children's social skills (Asher & Taylor, 1981). Frequency recording in which each occurrence of a behavior is observed and recorded is probably the most often used and simplest way to assess social skills. The kinds of social skills which can be assessed using frequency recording include positive verbalizations to other children, saying "please," "thank you," or "excuse me," compliance with teacher requests, invitations to share, etc. Good observational systems include a qualitative component (i.e., positive and negative) to specify the valence of the behavior (Gresham & Nagle, 1980; Strain, Shores, & Kerr, 1976; Strain & Timm, 1977; Strain & Wiegerink, 1976). In collecting naturalistic observations, it is important to collect observations across a variety of settings (classroom, hallway, playground, etc.) and across a variety of situations within a specific setting (large group versus small group activities, academic periods versus social periods, structured versus unstructured periods, etc.). The reason for the assessment of behavior across settings and situations is that social skills have been shown to vary as a function of the stimulus conditions in which they occur (Asher & Hymel, 1981; Cartledge & Milburn, 1980).

Naturalistic observations have been shown to be valid measures of social skills as they have correlated moderately with sociometric measures (Gresham & Nagle, 1980; Hartup, Glazer, & Charlesworth, 1967) and teacher ratings (Bolstad & Johnson, 1972; Greenwood et al., 1977; O'Connor, 1969, 1972). Several investigations have used naturalistic observations to assess mainstreamed handicapped children's social skills (Bryan & Bryan, 1978; Gampel, Gottlieb, & Harrison, 1974; Gottlieb, Gampel, & Budoff, 1975; McCauley,

Bruininks, & Kennedy, 1976).

Sociometric measures. Peer nominations and peer ratings have been used extensively in mainstreaming research (Asher & Taylor, 1981). With peer nominations, children are asked to specify or select a certain number of classmates who fit a particular sociometric criterion (e.g., "Name three classmates with whom you like to play"). Peer ratings represent a slightly different assessment approach in that all children in a classroom rate each other on a 1 to 5 scale according to some criterion (e.g., "Rate each person in the class according to how much you like to play with them"). The advantage of this technique is that everyone in the class is rated and there is little chance for children to forget classmates since a class roster is typically used.

There is some evidence to suggest that peer nominations and peer ratings assess different aspects of social status. Hymel and Asher (1977) suggested that peer nominations assess best friendship whereas peer ratings assess a child's overall acceptance in the peer group. The validity of this distinction between friendship and acceptance was tested by Gresham (1981d). Based upon a factor analysis of three peer nomination measures, two peer rating measures and four categories of behavioral observations; Gresham found that the peer nominations measured a factor called Friendship, the peer rating scales a factor called Likeability (acceptance), and the behavioral observations a factor termed Social Interaction.

The distinction between a handicapped child's acceptance versus friendship is important in mainstreaming placement decisions. While it may be unrealistic to expect a handicapped child to have several good friends in a regular classroom, it is both a realistic and desirable goal for the

mainstreamed handicapped child to attain a position of overall acceptability within the regular class peer group (Asher & Taylor, 1981). Handicapped children who are poorly accepted by their nonhandicapped peers due to social skill deficiencies should probably be placed in a more structured setting until some of the social skills that would facilitate peer acceptance have been obtained. Once mainstreamed, a program to continue social skills training in the regular classroom should be initiated and maintained.

Teacher ratings. Few teacher rating scales have been designed specifically for assessing children's social skills. The development of the Social Behavior Assessment (SBA) instrument by Stephens (1978) is a welcomed addition to the technology of social skills assessment. The scale was developed by collecting items from 12 behavior rating scales, conducting classroom observations of social behaviors, and reviewing relevant literature on children's social skills. After screening and eliminating many items, a final list of 136 social skills was distributed to 200 regular education and 200 special education teachers who were randomly selected. The teachers responded to each social skill on a six-point scale to the statement: This behavior is important for success in my class. The scale ranged from strong agreement to strong disagreement. The resulting scale consists of 136 social skills grouped into four categories: 1) behaviors related to the enviornment, 2) interpersonal behaviors, 3) self-related behaviors, and 4) task-related behaviors. Each social skill is rated on a 0 (behavior not observed or not applicable for this student) to 3 (behavior is never exhibited) scale. Higher scores on the SBA represent lower levels of social skill. The SBA is also accompanied by a book (Social Skills in the Classroom) which specifies techniques for teaching

all 136 social skills. The SBA should assist multidisciplinary teams in assessing the social skills of handicapped children and provide information to make informed judgments regarding a child's readiness for mainstreaming. The SBA has also been recently adapted for parents with social skills more germane to the home environment (Crouch, Note 2). Collecting both parent and teacher ratings of a handicapped child's social skills provides more information from which to make placement decisions and involves the parent in the assessment and placement process.

Multidisciplinary Team Assessment

As mentioned in the first part of this paper, both regular and special education teachers participate in low levels in placement committees and are generally dissatisfied with the multidisciplinary team process. Part of the reason for their lack of participation and satisfaction may be due to the dearth of assessment information which they have to offer at these meetings. Conventional assessment practices usually dictate that intellectual and perceptual-motor evaluation is the province of the school psychologist or educational diagnostician. Moreover, mainstreaming decisions are usually made more on the basis of conventional assessment information (i.e., IQ, academic achievement, and perceptual-motor functioning) than upon the level of a child's social skills.

It is the thesis of this paper that mainstreaming decisions should be based more upon a handicapped child's level of social skills than upon IQ or academic achievement levels. The bulk of the research evidence suggests that social skills are perhaps the most critical variables in evaluating the social outcomes of mainstreaming (see Asher & Taylor, 1981; Gresham, 1981a, 1981b for reviews).

Both regular and special education teachers as well as parents can play a crucial role in the assessment of handicapped children's social skills. For example, regular education teachers can take the responsibility of rating the child's social skills on the SBA, conducting the sociometric assessment, and taking behavioral observations across situations in the classroom. Special education teachers can assume the responsibilities of collecting observations across situations and coordinating the completion of the SBA with parents. In cases where it may be the handicapped child's first mainstreamed experience, special education teachers can conduct analogue or role-playing assessments of social skills (see Stephens, 1978). Parents can become involved in the assessment process by completing the SBA and, if necessary, taking observations of their child's behavior in home or community social situations with peers. If the proposed placement is to be the first mainstreamed experience for the child, the team may want to place the child temporarily in a mainstreamed setting until the relevant information could be collected regarding social functioning (i.e., SBA, observations, and sociometrics).

The preceeding type of assessment is truly <u>multifactored</u> in the sense that different sources of information are collected to make an informed decision regarding mainstreaming. The assessment is also <u>multidisciplinary</u> in the sense that regular education teachers, special education teachers, and parents are involved in the assessment process. This type of involvement in the assessment almost ensures increased participation in placement team meetings. It remains to be seen if this will translate into increased satisfaction with the team process.

Conclusion

The emphasis upon the development of social competence has been one of the most influential developments in the area of educational programming with both disadvantaged and handicapped children (Kolstoe, 1976; MacMillan, 1977; Zigler & Seitz, 1980; Zigler & Trickette, 1978). Zigler and Trickette (1978) maintain that social rather than intellectual or academic competence should be employed as the major measure of success of intervention programs such as Head Start. This idea has also been proposed for evaluating special education programs (Zigler & Seitz, 1980).

The use of social competence measures, however, should not be limited to merely the evaluation of educational outcomes. Perhaps a more valuable use of these measures is for classification and especially programming purposes. Little attention has been focused upon the use of social skills measures for making mainstreamed programming decisions. Social skills measures can and should be used to determine the least restrictive environment for individual handicapped children.

Reference Notes

1. Reschly, D. J., & Gresham, F. M. Use of social competence measures to facilitate parent and teacher involvement and nonbiased assessment. Unpublished manuscript, Iowa State University, 1981.

2. Crouch, P. Adaptation of the Social Behavior Assessment Scale for Parents. Department of Psychology, Iowa State University, 1980.

References

Asher, S. R., & Hymel, S. Children's social competence in peer relations: Sociometric and behavioral assessment. In J. D. Wine & M. D. Syme (Eds.), Social Competence. New York: Guilford Press, 1981.

Asher, S. R., & Taylor, A. R. The social outcomes of mainstreaming: Sociometric assessment and beyond. Exceptional Education Quarterly, 1981, 1, in press.

Bolstad, O. D., & Johnson, S. M. Self-regulation in the modification of disruptive classroom behavior. Journal of Applied Behavior Analysis, 1972, 5, 443-454.

Bryan, T. H., & Bryan, J. H. Social interactions of learning disabled children. Learning Disability Quarterly, 1978, 1, 33-38.

Campbell, D. T., & Fiske, D. W. Convergent and discriminate validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.

Cartledge, G., & Milburn, J. F. The case for teaching social skills in the classroom: A review. Review of Educational Research, 1978, 48, 133-156.

Cartledge, G., & Milburn, J. F. (Eds.). Teaching social skills to children: Innovative approaches. New York: Pergamon Press, 1980.

Federal Register, August 23, 1977, p. 42474-42518. Education of handicapped children. Regulations Implementing Education of All Handicapped Children Act of 1975 (Public Law 94-142).

Foster, S. L., & Ritchey, W. L. Issues in the assessment of social competence in children. Journal of Applied Behavior Analysis, 1979, 12, 625-638.

Gampel, D. H., Gottlieb, J., & Harrison, R. H. Comparison of classroom be-

havior of special-class EMR, integrated, low IQ, and nonretarded children. American Journal of Mental Deficiency, 1974, 79, 16-21.

Gottlieb, J., Gampel, D. H., & Budoff, M. Classroom behavior of retarded children before and after integration into regular classes. Journal of Special Education, 1975, 9, 307-315.

Greenwood, C. R., Walker, H. M., & Hops, H. Issues in social interaction/withdrawal assessment. Exceptional Children, 1977, 43, 490-499.

Gresham, F. M., & Nagle, R. J. Social skills training with children: Responsiveness to modeling and coaching as a function of peer orientation. Journal of Consulting and Clinical Psychology, 1980, 48, 718-729.

Gresham, F. M. Social skills training with handicapped children: A review. Review of Educational Research, 1981, 51(1), in press. (a)

Gresham, F. M. Misguided mainstreaming: The case for social skills training with handicapped children. Exceptional Children, 1981, 47, in press. (b)

Gresham, F. M. Assessment of children's social skills. Journal of School Psychology, 1981, 19(2), in press. (c)

Gresham, F. M. Validity of social skills measures in assessing the social competence of low-status children: A multivariate investigation. Developmental Psychology, 1981, 17, in press. (d)

Hartup, W. W., Glazer, J. A., & Charlesworth, R. Peer reinforcement and sociometric status. Child Development, 1967, 38, 1017-1024.

Hymel, S., & Asher, S. R. Assessment and training of isolated children's social skills. Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, 1977. (ERIC Document Service Reproduction Service No. ED 136 930).

Kolstoe, O. Teaching educable mentally retarded children (2nd ed.). New York: Holt, 1976.

Mercer, J. Technical manual: SOMPA: System of multicultural pluralistic assessment. New York: Psychological Corporation, 1979.

MacMillan, D. L. Mental retardation in school and society. Boston: Little, Brown, & Co., 1977.

McCauley, R., Bruininks, R., & Kennedy, P. Behavioral interactions of hearing impaired children in regular classrooms. Journal of Special Education, 1976, 10, 277-284.

O'Connor, R. D. Modification of social withdrawal through symbolic modeling. Journal of Applied Behavior Analysis, 1969, 2, 15-22.

O'Connor, R. D. Relative effects of modeling, shaping, and the combined procedures for modification of social withdrawal. Journal of Abnormal Psychology, 1972, 79, 327-334.

Salvia, J., & Ysseldyke, J. Assessment in special and remedial education. New York: Houghton-Mifflin, 1978.

Stephens, T. M. Social skills in the classroom. Columbus, Ohio: Cedars Press, 1978.

Strain P. S., Shores, R. E., & Kerr, M. M. An experimental analysis of "spillover" effects on the social interaction of behaviorally handicapped preschool children. Journal of Applied Behavior Analysis, 1976, 9, 31-40.

Strain, P. S., Shores, R. E., & Timm, M. A. Effects of peer social initiations on the behavior of withdrawn preschool children. Journal of Applied Behavior Analysis, 1977, 10, 289-298.

Strain, P. S., & Timm, M. A. An experimental analysis of social interaction

between a behaviorally disordered preschool child and her classroom peers. Journal of Applied Behavior Analysis, 1974, 7, 583-590.

Strain, P. S., & Wiegerink, R. Effects of socio-dramatic activities on social interaction among behaviorally disordered preschool children. Journal of Special Education, 1976, 10, 71-75.

Yoshida, R. Multidisciplinary decision making in special education: A review of issues. School Psychology Review, 1980, 9, 221-227.

Yoshida, R., Fenton, K., Maxwell, J., & Kaufman, N. Group decision-making in the planning team process: Myth or reality? Journal of School Psychology, 1978, 16, 237-244.

Zigler, E., & Seitz, V. Early childhood intervention programs: A reanalysis. School Psychology Review, 1980, 9, 354-368.

Zigler, E., & Trickette, P. K. IQ, social competence, and evaluation of early childhood intervention programs. American Psychologist, 1978, 33, 789-798.

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Social Skills Training With Handicapped Children: A Review

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Behavioral techniques derived from social learning theory to training social skills are reviewed. Studies using both handicapped and nonhandicapped populations are included. The literature is divided into four broad areas for review purposes: (1) manipulation of antecedents, (2) manipulation of consequences, (3) modeling, and (4) cognitive-behavioral techniques. Issues such as conceptualization and definition of social skills, social skills assessment, and components of social skills are also considered. It is concluded that social skills training represents a potentially effective approach to successful mainstreaming of handicapped children. More research using between-groups designs, technique comparisons, discriminant analysis, and social validation of behavior changes is needed. The issues of generalization and maintenance are also discussed.

The enactment of Public Law 94-142 has mandated special educators to, among other things, provide handicapped children with a free, appropriate public education in an environment that is least restrictive as possible. Most state and local educational agencies have taken this notion of *least restrictive* environment to mean that exceptional students will be mainstreamed into regular classrooms with their nonhandicapped peers to the maximum extent possible. The more common assumption by federal, state, and local special educational authorities is that physical placement of handicapped children in the presence of their nonhandicapped peers will result in increased mutual social interaction and social acceptance between the two groups.

Research has demonstrated, however, that handicapped children do not automatically emulate or interact with their nonhandicapped peers. Modeling research suggests that systematic arrangement of antecedents and consequences of social behavior along with directed attention to and subsequent retention of patterns of behavior are necessary before modeling effects will accrue (Bandura, 1969, 1977). Numerous studies have consistently shown that nonhandicapped children interact very little with mainstreamed handicapped children (Allen, Benning, & Drummond, 1972; Bruininks, 1978; Bryan, 1974, 1978; Feitelson, Weintraub, & Michael, 1972; Karnes, Teska, & Hodgins, 1970; Morgan, 1977; Ray, 1974). These studies indicate that handicapped children do not vicariously acquire social skills via observation of nonhandicapped models unless they are instructed, trained, or reinforced for doing so. Moreover, these studies demonstrate that there are typically low rates of social interaction between mainstreamed handicapped children and their nonhandicapped peers.

A plethora of research has also shown that handicapped children are poorly

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accepted by their nonhandicapped peers. This has been demonstrated in mentally retarded (Ballard, Corman, Gottlieb, & Kaufman, 1978; Bruininks, Rynders, & Gross, 1974; Goodman, Gottlieb, & Harrison, 1972; Gottlieb, 1975; Gottlieb & Budoff, 1979; Gottlieb, Semmel, & Veldman, 1978; Iano, Ayers, Heller, McGettigan, & Walker, 1974; Sheare, 1974), learning disabled (Bruininks, 1978; Bryan, 1974, 1976, 1978; Bryan & Wheeler, 1972), and emotionally disturbed/behaviorally disordered (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Morgan, 1977; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976; Quay, Morse, & Cutler, 1966; Victor & Halverson, 1976; Walker, 1971; Weintraub, Prinz, & Neale, 1978) populations. The fact that handicapped children interact less and are poorly accepted by their nonhandicapped peers strongly suggests that these special children are in need of social skills training to increase their rates of positive social interaction, decrease rates of negative social interaction, and/or enhance their social acceptance by nonhandicapped peers. Placement of handicapped children into regular classrooms without providing them with the social skills which are critical to peer acceptance may result in increased social isolation and a *more restrictive* social environment. That is, mainstreaming (as described above) may have an effect opposite to that which was intended. Mainstreaming does not ensure that handicapped children will model the social behaviors of their peers nor does it guarantee social interaction or social acceptance of these integrated handicapped students.

The purpose of this paper is to critically review the literature on social skills training with handicapped children. A large number of studies using more cognitively-based techniques such as modeling and coaching have been conducted using nonhandicapped populations. These studies will also be reviewed because of their potential relevance and applicability to handicapped populations. For purposes of this review, handicapped is used to refer to children who are either mentally retarded, learning disabled, or emotionally disturbed. Although all categories of handicapped children are possibly in need of social skills training, the above three categories represent the largest proportion of handicapping conditions and are, for the most part, the most likely candidates for mainstreaming in the public schools. This review will focus on (1) the conceptualizations and definitions of social skill, (2) the assessment techniques which have been used to evaluate social skills, (3) the variety of techniques derived from social learning theory which have been used to train social skills, (4) the relative effectiveness of each technique, (5) the types of social skills trained, and (6) the generalization and maintenance of trained social skills. The author will identify which techniques have the strongest base of empirical support and specify areas of needed research to more clearly conceptualize and evaluate the effects of social skills training programs. Apart from the more empircal focus on assessment and efficacy of social skills training, a more far-reaching goal of the present paper is to evaluate which training techniques have the most promise in successfully mainstreaming handicapped children. Although federal legislation has rightfully mandated education of handicapped children in least restrictive environments, it has not provided guidelines or techniques for stimulating peer or teacher acceptance of these mainstreamed children. It is the author's firm conviction that providing handicapped children with the requisite social skills for peer and teacher acceptance will facilitate the success of mainstreaming efforts on personal, social, and academic levels.

Considerations in Social Skills Research

There are certain issues which should be considered before reviewing the literature on social skills training. Two such issues warrant discussion: (1) conceptualization and definition of social skills and (2) assessment of social skills. These issues will be considered briefly before reviewing the social skills training literature.

Conceptualization of Social Skills

Social skills may be conceptualized as part of a broader construct known as social competence (Foster & Ritchey, 1979). Past behavioral conceptualizations of children's social behavior emphasized negative aspects of deviant social behavior such as behavior excesses or deficits (Ross, 1974). Recent interest in the area of social skills training has focused on positive as well as negative aspects of social behavior. That is, behaviorally-oriented professionals have attempted to build positive behavioral repertoires (i.e., social skills) as well as eliminate children's undesirable behaviors. This broadened emphasis extends beyond the study of individual responses to the study of the situations or contexts in which social behavior occurs (i.e., antecedents). Given this broader conceptualization, social skills are evaluated not only by the rate, frequency, and duration of the responses, but also by the situational parameters in which these responses occur such as time, place, and responses of other individuals in the same situation (Foster & Ritchey, 1979).

Even with this reconceptualization of social competence, the construct of social skills has been a difficult one to define in precise terms. Libet and Lewinsohn (1973) have defined social skill as the ability to emit behaviors which are positively or negatively reinforced and the inhibition of behaviors which are extinguished or punished by others. Some investigators have proffered empirical support for this definition by finding a positive correlation between behavioral rates of giving and receiving positive and negative reinforcement (Charlesworth & Hartup, 1967; Gresham & Nagle, 1980; Hartup, Glazer, & Charlesworth, 1967; Keller & Carlson, 1974). These studies suggest that giving and receiving positive and negative reinforcement are reciprocal social activities and are predictive of social acceptance and rejection, respectively. Foster and Ritchey (1979) provided a similar conceptualization of social skill or social competence. These authors stated that social competence is "those responses which, within a given situation, prove effective or, in other words, maximize the probability of producing, maintaining, or enhancing positive effects for the interactor" (p. 626). This statement implies that a socially skilled child's behavior results in positive consequences and a socially unskilled child's behavior results in negative or punishing consequences. Much of the research concerning social acceptance and social interactions of mainstreamed handicapped children indicates that their behavior in regular classrooms results in negative consequences (Bryan, 1974, 1976, 1978; Cowen et al., 1973; Gottlieb, 1975; Pekarik et al., 1976; Weintraub et al., 1978).

Some individuals conceptualize social skills in somewhat more global terms (Asher, Oden, & Gottman, 1977; Asher, Singleton, Tinsley, & Hymel, 1979; Gottman, 1977a). These investigators view the degree of a child's acceptance in the peer group as an indication of social skill level. In this view, children who are well accepted by peers are thought to possess a relatively higher degree of social skill than children who are less well accepted by peers. Given the huge body of literature concerning the poor

acceptance of handicapped children by their nonhandicapped peers (Ballard et al., 1978; Bruininks et al., 1974; Bryan, 1974, 1976, 1978; Cowen et al., 1973; Gottlieb et al., 1978; Morgan, 1977), mainstreamed handicapped children may be poorly accepted because of social skill deficiencies.

This global conceptualization of social skills, however, makes it difficult to identify what specific behaviors lead to poor acceptance in the peer group. Asher and Markell (Note 1) described a technique known as the "competence-correlates" approach in which certain social behaviors have been shown to correlate with a criterion of social competence (i.e., peer acceptance level). For example, Gottman, Gonso, and Rasmussen (1975) found that well-accepted children displayed significantly higher rates of greeting, asking for and giving information, extending an offer of inclusion, and effective leave taking in role playing situations designed to assess friendship-making skills than poorly accepted children. Similarly, Asher, Renshaw, Geraci, and Dor (1979) found that unpopular children were more likely to suggest physically aggressive strategies to resolve hypothetical problem situations than popular children. Unpopular children's responses to these social situations were also judged to be less relationship maintaining and effective than responses of popular children. In analyzing the literature on behavioral correlates of social acceptance (Asher & Hymel, in press; Asher et al., 1977; Hartup, 1970; Moore, 1967), Oden and Asher (1977) found that four general categories of behavior seemed to predict social acceptance. These categories were participation, cooperation, communication, and validation support. Although the above studies have been done with nonhandicapped children, they certainly suggest that handicapped children may have the same behavioral correlates of poor peer acceptance.

There have been several studies which have investigated the relationship between social interaction patterns and social acceptance of learning disabled children. Bryan, Wheeler, Felcan, and Henek (1976) have shown that learning disabled children are poorly accepted by their nonhandicapped peers and that these learning disabled children emit more competitive statements and receive fewer consideration statements than nondisabled children. Other studies have shown that poorly accepted learning disabled children are less accurate in understanding nonverbal communication patterns (Bryan, 1978) and are less accurate in assessing their own social status (Bruininks, 1978).

It seems reasonable to assume that one of the many reasons that handicapped children are poorly accepted in mainstreamed classrooms is because of deficits in one or more of the previously mentioned behaviors. Although much more research is needed to isolate the correlates of poor peer acceptance in handicapped populations, the existing literature with normal populations supports the sociometric conceptualization of social skill.

Some conceptualizations of social skill are more directly related to training. Gresham (in press) has conceptualized social skill deficits along three dimensions: (1) skill deficits, (2) performance deficits, and (3) self-control deficits. This view is similar to Bandura's (1969, 1977) delineation between acquisition versus performance of behavior. Children with social skill deficits do not have the necessary social skills to interact appropriately with peers. Teaching social skills to these children is accomplished through observational learning or modeling (Bandura, 1969, 1977). Stephens (1978) has presented evidence that in classroom situations, live modeling is best used to teach new social behaviors. Children who possess performance deficits

may have the social skills for effective interaction, but do not perform these skills either because of response-inhibiting anxiety or low motivation. These deficits are remediated primarily through manipulation of antecedents or consequences of social behavior. Stephens (1978) asserts that reinforcement-based techniques are best used to increase or maintain social skill levels once they have been established through modeling. Children who exhibit self-control deficits often lack adequate behavioral controls to inhibit impulsive, disruptive, or aggressive social behavior. These children are differentiated from performance-deficit children in that they perform behavior which is inappropriate under the environmental circumstances or they perform behavior without considering the consequences of their responses. Self-control deficits have been remediated through a variety of techniques from the cognitive behavior modification literature such as self-control training, self-instruction, verbal mediation, relaxation, and self-reinforcement (Meichenbaum, 1977; Meichenbaum & Goodman, 1971; O'Leary & Dubey, 1979; Robin, Schneider, & Dolnick, 1976).

The skill, performance, and self-control deficit conceptualizations of children's social skills suggest differential techniques will be effective with different types of social skill problems. In the review to follow, techniques used will be reviewed as focusing on skill-deficit, performance-deficit, or self-control deficit remediation.

Assessment of Social Skills

Given the importance of social skills in gaining acceptance into the peer group and for effective social interchanges, it is important to establish assessment techniques which will both identify those children who are poorly accepted by their peers and to isolate the specific behaviors which may contribute to poor peer acceptance. In a recent article on the assessment of social withdrawal in children, Greenwood, Walker, and Hops (1977) stated that three of the most commonly used assessment methods are naturalistic observations, sociometric measures, and teacher nominations or ratings. These three measures have also been used to assess the social skill deficits of aggressive/disruptive children. Analogue assessment and simulation methods have been used less frequently in the child social skills research, but have received increased attention. While potentially important, these assessment techniques will not be reviewed in this section. For a more comprehensive review of all social skills assessment methods, the interested reader should consult the excellent review by Asher and Hymel (in press). Without question, naturalistic observations and sociometrics have been the most frequently used assessment strategies (Asher & Hymel, in press; Asher & Markell, (Note 1); Asher & Renshaw, in press; Gottman, 1977a; Gresham, in press). The purpose of this section is to briefly review these social skill assessment methods. Before reviewing each method, however, it is important to understand the notion of *social validation* of children's social skills as the social validity of any training technique will determine its importance to society.

Social validity (Van Houten, 1979; Wolf, 1978) refers to the extent to which behavior change is considered important or socially useful by significant others in the environment. Wolf suggests that social validation consists of three levels: (1) the social significance of the goals of behavioral interventions, (2) the social appropriateness of the interventions or procedures used, and (3) the social importance of the effects. One can readily see the importance of social validity in assessing the impact

of social skills training programs with handicapped children. For example, one goal of a behavior modifier might be to increase the number of times a mentally retarded child says thank you to the teacher. While this may be an appropriate goal, the teacher might not consider it socially valid because the teacher's goal might have been broader—such as increasing the frequency of all positive interactions with peers. Thus, the social validity of training "thank you" responses in this case would be poor. A similar case could be made for the social appropriateness of interventions. Many parents, teachers, and school administrators would balk at the idea of using aversive conditioning techniques such as electric shock or chemical aversion to reduce drooling behavior when equally effective and less aversive techniques could be used (e.g., overcorrection). In this case, the ends would not justify the means and would probably not be considered socially valid by the parties involved. Finally, the social importance of social skill training effects is perhaps the most critical aspect of social validity in the sense of "consumer satisfaction." Van Houten states that basically two methods are used to assess the social valdity of behavior change: (1) *social comparison*, comparing the performance of target subjects with that of peers who do not warrant treatment and (2) *subjective evaluation*, having judges with special expertise (parents, teachers, etc.) rate the behaviors of subjects before and after treatment. Many times behavioral researchers demonstrate large changes in target behaviors only to realize anecdotally through conversations with teachers, parents, or peers that the changes are not socially meaningful or important. One example would be when a behavior modifier increases the rate of a social interaction in a handicapped child who is poorly accepted by peers. After treatment, the child might have doubled his/her interaction rate, but might be as poorly accepted by peers. In this case, the treatment and outcome would have poor social validity. The issue of social validity and its relationship to social skills training with handicapped children will be discussed in subsequent parts of this review.

Naturalistic observation. Assessment of children's behavior in natural settings is perhaps the most face valid method of assessing children's social skills (Asher & Hymel, in press). Naturalistic observation has been used to assess social withdrawal (Allen et al., 1964; Buell et al., 1968; Cooke & Apolloni, 1976; O'Connor, 1969, 1972; Shores, Hester, & Strain, 1976; Strain, 1977; Strain & Shores, 1977; Strain, Shores, & Kerr, 1976), sharing (Rogers-Warren & Baer, 1976; Warren, Rogers-Warren, & Baer, 1976), aggressive behavior (Forehand & King, 1977), disruptive behavior (Iwata & Bailey, 1974), and cooperative play (Kirby & Toler, 1970).

Direct observation methods possess several advantages. One, they are particularly sensitive to the effects of social skills intervention techniques (Bellack, 1979). Observational data typically reflect changes in behavior after treatment and are more likely to pick up these changes than more global measures such as teacher ratings or sociometrics. Two, observations are conducive to repeated measurements in both single-case and group experimental designs. Repeated measurements of social behavior allow researchers to monitor the daily variability of a child's social behavior and to establish trends in his/her pattern of responses. Three, naturalistic observation allows one to assess the antecedents and consequences surrounding particular behaviors. Quilitch and Risley (1973) for example, found that rates of social interaction were higher when certain "social" toys were provided to preschoolers than when "nonsocial" toys were provided. Madsen, Becker, and Thomas (1968) found that the combination of rules (antecedents), praise, and ignore (consequences) led to the

greatest increases in rates of appropriate social behavior and decreases in rates of disruptive behavior in a classroom setting. Observations of behavior in naturalistic settings assist in the determination of those aspects of the environment which cue, reinforce, punish, or extinguish behavior and assist in the design of social skills training programs. Four, observations collected in naturalistic settings assess operationally defined individual behaviors rather than global constructs (e.g., aggression) which require inference as to what the construct means (Foster & Ritchey, 1979). This focus on objectivity and operational definition of behaviors in naturalistic environments has been the hallmark of behavioral assessment (Nelson & Hayes, 1979).

The naturalistic observation methodology also possesses several disadvantages. First, observations may be subject to observer bias, drift, cheating, and sources of bias in combination (Kent & Foster, 1977). These biases thus threaten the reliability and validity of observational data. Second, observational data using rate of social interaction have not shown long-term predictive validity regarding one's level of psychological adjustment as an adult (Gottman, 1977a; Asher & Markell, Note 1). Third, global rates of social interaction do not correlate with how well children are liked by peers (Asher & Hymel, in press; Gottman, 1977a; Jennings, 1975). There have been a number of studies suggesting that qualitative aspects of social interaction rate predict social acceptance. (Gottman et al., 1975; Gresham, 1979; Hartup, Glazer, & Charlesworth, 1967). Hartup et al. found a significant positive relationship between sociometric acceptance and positive peer interaction and a positive relationship between negative peer interaction and sociometric rejection. The above findings indicate that qualitative as well as quantitative observation codes should be used to assess children's social skills. Last, most observational codes used in naturalistic settings have lacked social validation (Wolf, 1978; Van Houten, 1979). Critics of the naturalistic observation methodology assert that these measures offer either a too narrow conceptualization of social skills or that they typically do not reflect the most important aspects of social skills (Gottman, 1977a; Asher & Markell, Note 1; Asher, Note 2).

Naturalistic observations possess distinct advantages over other social skills assessment methods because of their sensitivity, nonreactivity, objectivity, and specificity regarding antecedents and consequences of social interaction. These advantages, however, must be tempered by their obvious disadvantages such as proclivity toward bias, lack of predictive validity, and lack of relationship with measures of peer acceptance when global interaction rates are used. Given these disadvantages, naturalistic assessment of social behavior should not be used as sole indices of social skill level.

Sociometric measures. Behavioral researchers have recently begun to employ sociometric (e.g., peer nominations and peer ratings) as primary selection and outcome measures in social skills training research (Gottman et al., 1975; Gottman, Gonso, & Schuler, 1976; Gresham & Nagle, 1980; Oden & Asher, 1977). Sociometrics have not traditionally been considered behavioral assessment devices, but increasing numbers of social skills training programs are realizing their value as selection, outcome, and social validation measures (Asher & Hymel, in press; Asher & Markell, Note 1; Asher et al., 1977; Gottman, 1977a; Gresham & Nagle, 1980; LaGreca & Santogrossi, 1980; Minkin et al., 1976; Oden & Asher, 1977). Sociometrics typically are presented in peer nomination or peer rating formats. With peer nominations,

children are asked to select a specified number of peers according to a designated criterion (e.g., three best friends, three favorite play partners, etc.). Peer rating scales require that children rate each of their classmates according to a specified criterion (e.g., play partner, work partner, etc.) on a 5-point Likert-type scale (Asher & Hymel, in press; Asher & Markell, Note 1; Roistacher, 1974). A child's score is the average of the ratings he/she receives from same-sex peers because there tends to be considerable sex bias in sociometric ratings with children (Singleton & Asher, 1977).

Sociometric measures, particularly peer ratings, have several advantages. One, sociometric measures have good predictive validity. Cowen et al. (1973) found that sociometric measures of peer acceptance taken in childhood were the only measures which discriminated adults who were referred to community mental health centers from those who were not. Measures of IQ, self-concept, anxiety, grade point averages, and teacher ratings did not discriminate between the two groups. Two, sociometric measures have adequate reliability. Using sociometric measures, Oden and Asher (1977) found a test-retest correlation of .82 for a "play with" rating scale, .84 for a "work with" rating scale, and .62 for a "best friend" peer nomination measure. Asher, Singleton, Tinsley, and Hymel (1979) found a stability coefficient of .81 for a "play with" rating scale compared to .56 for a peer nomination measure. These studies suggest that peer rating sociometrics tend to be more stable than nomination measures (see Asher et al., 1977; Asher and Markell, Note 1; Asher, Note 2 for a discussion). A third advantage of sociometrics is that they have a certain degree of concurrent validity. Hartup et al. (1967) showed positive correlations between rates of positive interaction and sociometric acceptance. Similar findings were reported by Gresham and Nagle (1980). Sociometrics have also shown concurrent validation with teacher ratings of social behavior in the classroom. Sociometric measures can also be considered as one form of social validation. These measures provide a global assessment of children's social impact on those around them. Thus, sociometric measures possess social validity in the sense that significant others (i.e., peers) view their social behavior as positive. Whether used as selection or outcome measures (or both), sociometrics have numerous advantages in the area of social skills training.

Sociometric measures also have several disadvantages. First, they may become reactive if used on a regular basis, which limits their usefulness in single-subject or time series designs. Second, they provide limited information concerning the antecedents and consequences of poor social acceptance. Therefore, the exact nature and source of interpersonal difficulty cannot be discerned from sociometric measures. Third, peer nomination measures do not appear to be as useful as peer rating scales for at least two reasons. One, peer nomination measures tend to be less reliable than peer rating scales (Asher & Hymel, in press; Oden & Asher, 1977). Two, peer nomination measures tend to be less sensitive as outcome measures in social skills training programs. Two studies (Gresham & Nagle, 1980; Oden & Asher, 1977) failed to find significant changes on peer nomination measures, but did find significant changes on "play with" rating scales. Based on these two studies, it appears that peer ratings scales are sensitive to changes in scale criteria (e.g., play with versus work with criteria). Singleton and Asher (1977) reported similar results using "play with" and "work with" rating scales in studying peer preferences in an integrated school district.

Teacher ratings. Ratings of children's behavior by teachers have been used fre-

quently to identify children in need of social skills training. There is some evidence to suggest that teachers can accurately assess children's social behavior. These ratings have been validated against behavioral observations as well as sociometric data (Bolstad & Johnson, 1972; Greenwood et al., 1977; Pekarik et al., 1976). Several investigators have simply asked teachers to nominate children whom they thought were the most socially withdrawn (Evers & Schwarz, 1973; O'Connor, 1969, 1972). These children were subsequently trained in social skills using modeling and/or reinforcement-based techniques. Walker and Hops (1976) used the Walker Problem Behavior Identification Checklist to select socially withdrawn children for their training program. The Walker checklist has two scales which are useful in screening children who are having problems in social withdrawal and disturbed peer relations. Apart from this face validity, however, these scales on the Walker checklist have not been specifically validated for use as outcome measures in social skills training programs.

Using teacher ratings, Reardon, Hersen, Bellack, and Foley (1978) failed to find significant correlations between teacher ratings and a role-play analogue assessment. Given this negative finding, this calls into question the validity of the analogue assessment more than the validity of teacher ratings because the latter has been validated against sociometrics and naturalistic observations (Bolstad & Johnson, 1977; Greenwood et al., 1977).

Stephens (1978) has developed a teacher rating scale in which 136 social skills grouped into four categories are rated on a 0 to 3 scale. The four categories are: (1) behaviors related to the environment, (2) interpersonal behaviors, (3) self-related behaviors, and (4) task-related behaviors. Although the Stephens' scale (Social Behavior Assessment) represents a potentially useful screening device, there is currently no evidence available regarding its reliability and validity in assessing children's social skill deficits. Standardization of the Social Behavior Assessment instrument is currently underway (Stephens, Note 3).

Although there is a paucity of data concerning the utility of teacher ratings in evaluating children's social skills, it appears that these ratings may constitute useful global information in assessing social skills. Preliminary evidence suggests that teachers can make accurate discriminations between students in evaluating their social behavior and may serve as reliable referral sources for children in need of social skills training. Presently, the data suggest that teacher ratings have not been validated as primary outcome measures, but they constitute a means of socially validating the effects of social skills training programs. Thus, like sociometrics, they can and should be used for this purpose.

Review of the Literature

The following review of the literature will be organized according to four broad areas of intervention techniques: (1) manipulation of antecedents, (2) manipulation of consequences, (3) modeling, and (4) cognitive-behavioral techniques. Several studies have used various combinations of the above techniques and will be reviewed in the area deemed most appropriate by the author. Within each of the above areas, the following variables will be considered: population, age level, and types of social skills trained. The issues of technique effectiveness, experimental design, and generalization and maintenance will be discussed. This paper reviews the major techniques

derived from social learning theory which have been used to train social skills in handicapped children and, while comprehensive, it is by no means exhaustive.

Manipulation of Antecedents

Social skills have been successfully trained by manipulating antecedent events in the handicapped child's social environment. Many researchers feel that handicapped children have low rates of social interaction and/or are poorly accepted by their peers because their social environment does not set the occasion for positive social exchanges between handicapped children and their peers. Antecedent control of social behavior can set the occasion for social interaction and has the advantage of requiring less teacher time and active monitoring than do consequent control techniques (edibles, praise, shaping, etc.). Manipulation of antecedent events treats social skill difficulties as performance deficits rather than learning or self-control deficits. This is the case because the experimenter is manipulating events which are thought to set the occasion for positive social interaction and/or peer acceptance rather than directly teaching social skills to the handicapped child. The implicit assumption is that the child possesses the requisite social skills but is not performing them at desirable levels.

Three investigations have shown that social interaction rates can be increased by having a nonhandicapped peer confederate initiate social interaction with handicapped children (Strain, 1977; Strain & Timm, 1974; Strain, Shores, & Timm, 1977). The general procedure in these three studies involved the peer confederates trying to get the handicapped child to play with them in a free-play environment. Confederates were coached prior to experimental sessions in correct social initiations (e.g., "Come on, let's play ball," etc.). Strain et al. (1977) increased both the physical/gestural and vocal/verbal social interaction rates of six moderately retarded preschoolers via the peer initiating method. Strain (1977) and Strain and Timm (1974) reported similar findings using peer initiations with retarded preschoolers. All of the studies were conducted in an experimental setting and none of the studies reported maintenance of effects over time. Only one study (Strain, 1977), reported generalization to a different free-play setting. While this method holds promise for increasing social interaction between handicapped and nonhandicapped children, there is no research investigating the effects of peer initiations in mainstreamed classrooms. Future research should address the utility of this technique in facilitating social interaction and peer acceptance of handicapped children in naturalistic environments.

Three studies have demonstrated that sociodramatic activities in which handicapped children assume the role of characters in familiar children's stories (e.g., *Three Bears*, *Snow White*, *Little Red Riding Hood*, etc.) are effective in increasing rates of social interaction between handicapped children (Shores et al., 1976; Strain, 1975; Strain & Wiegerink, 1976). Sociodramatic activities probably lead to increases in social interaction because the nature of the activity sets the occasion for reciprocal social interchanges between the participants (Strain & Shores, 1977). The typical procedure in sociodramatics is for the teacher to read a familiar story to a group of children and have the participants act out various roles of the characters in the story. Prompts, modeling of responses, and social praise are used to facilitate participation.

Shores et al. (1976) measured the frequency of social interaction of nine behaviorally handicapped preschoolers under three experimental conditions: (1) active

teacher involvement in free-play, (2) no teacher involvement in free-play, and (3) teacher structured free-play. During the active involvement condition, the teacher interacted with the children and provided assistance in their play activities. In the no teacher involvement condition, the teacher did not interfere with the children's play activities. During the teacher structured free-play condition, the teacher encouraged children to assume various roles (e.g., firemen, storekeeper). Significantly more child-child interactions occurred during the teacher structured free-play condition than either the active or no-involvement conditions. This suggests that active teacher involvement in handicapped children's free-play activities may disrupt ongoing social interchanges between the children and redirect social interaction to the teacher (i.e., teacher-child interaction).

The Shores et al. (1976) and similar studies (Strain, 1975; Strain & Wiegerink, 1976) suggests that providing children with the opportunity to portray certain roles in the context of sociodramatic activities can set the occasion for increased social interaction. However, as in the peer initiation research, there are little data supporting the generalization and/or maintenance of these effects. Additionally, all of the sociodramatic studies have been conducted in self-contained and not mainstreamed classroom settings. In each case, the investigators have focused on social interaction between handicapped children and not upon interaction between handicapped and nonhandicapped students. Until studies are conducted within mainstreamed classrooms looking at social interactions between handicapped and nonhandicapped children, definitive statements regarding the efficacy of sociodramatics in facilitating reciprocal social exchanges and peer acceptance of mainstreamed handicapped students cannot be made.

Five investigations have demonstrated that the arrangement of game-playing activities or providing information on a child's competence in game playing can facilitate social interaction or peer acceptance of handicapped children. (Ballard, Corman, Gottlieb, & Kaufman, 1978; Berry & Marshall, 1978; Mithaug & Wolfe, 1976; Rucker & Vincenzo, 1970). Aloia, Beaver, and Pettus (1978) showed that presenting information to an Educable Mentally Retarded (EMR) child's nonhandicapped peers regarding his/her competency in a game-playing activity increased the selection of these EMR's by their nonhandicapped peers on a subsequent task. Although this suggests that competency statements about a retarded child will increase initial desire for social interaction on the part of peers, these data do not address what factors are involved in the ultimate social acceptance and integration of retarded children into regular classrooms. This is perhaps most clearly illustrated by the results of a study by Rucker and Vincenzo (1970). In this study, poorly accepted mildly retarded children were paired with highly accepted nonhandicapped students to work on planning a school carnival. At posttest, experimental retarded children showed significantly greater gains in peer acceptance than control children (those who were not paired). However, these gains dissipated at a 1-month follow-up. This study indicates that peer pairing and involvement of retarded children in classroom activities only leads to transitory gains in peer acceptance levels. However, it should be noted that treatment only lasted for 2 weeks and took place outside of the classroom setting. It might be unreasonable to expect long-term gains in popularity without the benefit of an ongoing program designed to facilitate peer acceptance. Other studies have reported increases in social interaction or peer acceptance

using prearranged cooperative activities between retarded children and their nonhandicapped peers (Ballard et al., 1978; Berry & Marshall, 1978) and interdependent task arrangements in which retarded children had to cooperate in order to complete a puzzle (Mithaug & Wolfe, 1976). Berry and Marshall, for example, demonstrated that preschool retarded children had higher rates of social interaction, vocalization, and nonverbal communications among themselves when a social facilitator was present and when certain "social toys" were provided in the environment.

To summarize, 11 studies were reviewed in which some form of antecedent control had been used to train social skills in handicapped children. Three variations of antecedent control had been used: (1) peer initiations, (2) sociodramatic activities, and (3) use of cooperative tasks or games. The six studies using peer initiations and sociodramatic activities have shown increases in social interaction either in experimental or self-contained settings. None of these studies have investigated the effectiveness of their techniques in mainstreamed classrooms and none have used sociometric data as outcome measures. Only one study (Strain, 1977) has collected generalization data and none have assessed maintenance. It is quite obvious that these techniques need to be tested in mainstreamed classrooms using measures of peer acceptance before and after treatment. Follow-up data should be collected at least three times to assess maintenance (e.g., 1, 3, and 6 months). The use of cooperative tasks or games has usually included both handicapped and nonhandicapped children, with the exception of Berry and Marshall (1978) and Mithaug and Wolfe (1976). These studies have shown short-term peer acceptance of retarded children, but data concerning long-term gains in popularity are virtually nonexistent.

Manipulation of antecedents holds promise as an effective technique in training social skills in handicapped children. However, much more research is needed to determine the efficacy of this technique in bringing about increases in positive social interaction and facilitating peer acceptance of handicapped children in mainstreamed classrooms.

Manipulation of Consequences

A wide variety of social skills have been trained by manipulating events consequent to handicapped children's social behavior. Many researchers maintain that handicapped children have low rates of social interaction or display high rates of aversive interaction because their environment does not reinforce appropriate social behavior. Most researchers using consequence manipulation view these social skill difficulties as *performance* rather than *skill* deficits.

The purpose of this section is to review studies which have used some form of consequent control to train social skills. Most of these studies have used either mentally retarded, emotionally disturbed, or learning disabled populations, although a few studies are included which did not use a handicapped population. No attempt will be made to review all of the studies using consequent control to train social skills. These numerous studies have been excellently reviewed elsewhere (Atkeson & Forehand, 1979; Bijou & Baer, 1976; Burchard & Harig, 1976; Harris & Ersner-Hershfield, 1978; Kazdin, 1977; Kazdin & Bootzin, 1972; Lovaas & Newsom, 1976; Margolies, 1977; O'Leary & Drabman, 1971). Instead, a selective sampling of these techniques will be reviewed. Due to the sheer number of studies involved, each technique will be described to give the reader an idea of how the technique was

applied. Critical evaluation and general criticisms of these techniques will be briefly considered in a summary section.

A plethora of consequent techniques have been used to train handicapped children's social skills. These include: (1) contingent social reinforcement (2) token reinforcement programs, (3) primary reinforcement, (4) group contingencies, (5) home-based contingencies, (6) differential reinforcement of other behavior (DRO) and differential reinforcement of low rates of responding (DRL) and timeout and negative attention. Thirty-three studies are reviewed which have demonstrated the effectiveness of consequence manipulation in training social skills. Rarely, however, have cross-technique comparisons been made to determine the relative effectiveness of each. Studies using each of the aforementioned consequent control techniques are reviewed next.

Contingent social reinforcement. Five studies have used some form of social reinforcement contingent upon social interaction to increase rates of social interaction in children. Two such studies were conducted with nonhandicapped socially withdrawn preschoolers (Allen et al., 1964; Buell et al., 1968) and the rest with handicapped populations (Kopfstein, 1972; Mayhew, Enyart, & Anderson, 1978; Nash, Thorpe, & Andrews, 1979). The general procedure in these studies involved a teacher or attendant socially reinforcing (praise, hugs, etc.) the isolated child whenever he/she interacted or cooperated with others in the social environment. For example, Allen et al. (1964) had a teacher socially reinforce a 4-year-old girl whenever she played with other children and ignore the girl whenever she played alone. Playing with others increased from 10 percent of the time before intervention to 60 percent of the time after the social praise contingency went into effect. Similar findings were reported by Buell et al. (1968) who also used a preschool social isolate.

Contingent social reinforcement appears to be effective in increasing rates of social interaction in severely handicapped populations. Mayhew et al. (1978) used contingent social reinforcement (smiling, patting, tickling, etc) to increase the social behavior (e.g., proximity, physical contact, and vocalizations) of 18 severely and profoundly retarded institutionalized adolescent females. Using a mildly handicapped population, Nash et al. (1979) increased social interaction rates and verbalizations using contingent teacher attention. One study (Kopfstein, 1972) failed to show increases in positive social interaction in a sample of trainable mentally retarded children using contingent social praise.

Contingent social reinforcement appears to possess at least short-term effectiveness in increasing rates of social interaction in handicapped children who possess varying levels of intelligence and adapative behavior competencies. None of the studies reviewed have attempted to use continigent teacher attention in mainstreamed classrooms to increase social interaction rates between handicapped and nonhandicapped children.

Token reinforcement program. Seven studies have used some type of token-based reinforcement system to teach appropriate social behavior to handicapped children. Token systems have been used effectively with severely emotionally disturbed (Drabman, 1973; Russo & Koegel, 1977), severely retarded (Knapczyk & Yoppi, 1975), delinquent (Fixen, Wolf, & Phillips, 1972; Phillips, Phillips, Fixen, & Wolf, 1971), and mildly handicapped populations (Broden, Hall, Dunlap, & Clark, 1970; Iwata & Bailey, 1974).

Teacher-administered token reinforcement has been used successfully in the regular classroom with severely disturbed children. Russo and Koegel used a token reinforcement program in a classroom of 20 to 30 nonhandicapped children to increase the appropriate social behavior of a 5-year-old autistic female. Tokens were made contingent on certain social skills such as saying hello to another child, borrowing a toy, and sharing materials. Self-stimulatory behavior (e.g., rocking, repetitive finger movements, rhythmic manipulation of objects, etc.) were punished via removal of tokens (response cost). Frequency of social skills increased and self-stimulation decreased under the token system. Moreover, when the child was moved into another mainstreamed classroom the next year, social skills were maintained on a similar token reinforcement system. Unfortunately, the authors did not collect sociometric data to determine nonhandicapped peers' perceptions of the target child. Sociometric data should have been used as a means of socially validating changes in target behaviors.

Social skills have been successfully taught within the context of special education classrooms using token-based reinforcement systems. Iwata and Bailey compared the relative effectiveness of token reward and token cost procedures in changing the social behavior of 15 mildly handicapped special education students. During the various phases of the study, children were either given tokens contingent on inappropriate social behavior (off-task and rule violations). These researchers found that reward and cost programs to be equally effective in controlling social behavior in the classroom and the children indicated no preference over either system. Similar findings have been reported by others using adolescent predelinquent populations (Fixen et al., 1973; Phillips et al., 1971) and junior high special education populations (Broden et al., 1970).

In summary, token reinforcement and token cost programs appear to be effective in teaching social skills to handicapped children. As in the contingent social reinforcement literature, token systems have been successfully used across a broad range of handicapping conditions. Also, token systems have been applied within the context of mainstreamed classrooms and have experienced some success. None of the above studies, however, have collected social validity data from peers or teachers regarding the meaningfulness of behavior change.

Primary reinforcement. Three studies reviewed used some type of primary reinforcement to increase social interaction rates of handicapped children (Kirby & Toler, 1970; Romanczyk et al., 1975; Whitman, Mercurio, & Caponigri, 1970). The general procedure in all three studies involved having a teacher or experimenter reinforce target children with food (paired with social praise) contingent on social interaction. In the most comprehensive of these studies, Romanczyk et al. increased social interaction rates of eight autistic or childhood schizophrenic children using primary reinforcement and a passive shaping technique. In two experiments, Romanczyk et al. reinforced children with food contingent on social play. If social play had a low operant rate, the experimenters employed a passive shaping technique in which the target child was placed next to another child and his/her hand was placed on a toy. This was done to prompt social play. The target child was not reinforced for social play if the passive shaping technique was used. Results of these two experiments with younger (5 to 7 years old) and older (7 to 12 years old) subjects demonstrated that contingent primary reinforcement and passive shaping were

effective in increasing the social play of severely emotionally disturbed children. The investigators critically point out that their study only assessed the frequency of social interaction and did not attempt to assess the quality or appropriateness of social play. Other studies using antecedent control techniques have developed valid codes to assess *qualitative* as well as *quantitative* aspects of social interaction (Shores et al., 1976; Strain, 1977; Strain et al., 1977). Similar successes using primary reinforcement to increase social interaction rates were reported by Kirby and Toler (1970) and Whitman et al. (1970).

Primary reinforcement paired with either social praise or passive shaping appears to be effective in increasing social interaction rates of severely handicapped children (i.e., severely retarded, autistic, etc.). This technique has been infrequently applied in mainstreamed classrooms, because severely handicapped children usually remain in self-contained or institutional settings. Primary reinforcement may represent a necessary first step in building and maintaining positive social repertoires in severely disturbed populations (Lovaas & Newson, 1976; Margolies, 1977). Past research suggests that in many cases, primary reinforcement can be faded and social behavior can be maintained using only social reinforcers (see Birnbrauer, 1976; Lovaas & Newsom, 1976; and Margolies, 1977 for a review).

Group contingencies. The term group contingencies has usually been used to refer to the application of consequences for the group behavior management of children in the classroom (Litow & Pumroy, 1975). Three types of group-oriented contingency systems have been used to control classroom behavior and to teach social skills: *dependent* group-oriented contingencies, *independent* group-oriented contingencies, and *interdependent* group-oriented contingencies. According to Litow and Pumroy (1975), dependent group contingencies are established when the same response contingencies are simultaneously in effect for all group members, but are applied only to the performances of one or more selected group members. Thus, reinforcement for the entire group depends on the behavior of selected children rather than the behavior of the group as a whole. Independent group contingencies are established when the same response contingencies are concurrently in effect for all group members, but are applied to behaviors on an individual basis. With independent group contingencies, reinforcement is independent of group behavior and is determined by the behavior of each individual. Interdependent group contingencies are established when the same response contingencies are concomitantly in effect for all group members, but are applied to a level of group performance.

Six studies in this review have used one or a combination of group-oriented contingencies to teach social skills to handicapped children. Four of these studies focused on the reduction of inappropriate social behavior (Brown, Reschly, & Sabers, 1974; Page & Edwards, 1978; Rosenbaum, O'Leary, & Jacobs, 1975; Gresham & Gresham, in press). For example, Page and Edwards examined the relative effectiveness of independent and interdependent group contingencies in controlling disruptive social behavior (e.g., out-of-seat, talking to peers, talking out to teacher, etc.). During the independent group-oriented contingency phase, children who finished their academic work and met an accuracy criterion received free time. Those who did not finish their work and/or did not meet the accuracy criterion were required to continue working and were not allowed to participate in free-time activities. During the interdependent group contingency phase, free-time reinforcement was contingent

on every student in the class completing the assigned work and/or meeting the accuracy criterion. If any student did not finish the work and/or meet the accuracy criterion, the entire class was assigned more work and were not allowed to participate in free-time activities. Disruptive social behavior decreased under both contingency systems when sequentially applied across five classrooms. The interdependent group contingency system was slightly, but not significantly, more effective in controlling behavior. Similar findings were reported by Brown et al. (1974) and Rosenbaum et al. (1975) with aggressive preschool and hyperactive populations, respectively. Gresham and Gresham (in press) suggest that dependent and interdependent group contingencies are more effective than the independent contingency system.

Two studies using group-oriented contingencies have focused on increasing the frequency of appropriate social behaviors. Gamble and Strain (1979) used two interdependent group contingency systems[1] to increase the frequency of certain social skills in a self-contained classroom for emotionally disturbed children. Social skills included behaviors such as cooperation, compliance to requests, sharing, saying "please" and "thank you," and verbal complimenting. Under the first interdependent contingency system, children earned reinforcement (package of "Tic Tacs") for the entire class if each child earned at least 20 Smiley Faces per week. Smiley faces were awarded contingent upon the emission of the above-mentioned social skills. Under the second interdependent contingency system, a designated sum of smiley faces earned by the entire class resulted in reinforcement for the entire class at the end of the week. Both systems were effective in increasing the frequency of social skills of these emotionally handicapped children. The first interdependent system was significantly more effective than the second when implemented after the second contingency system (fourth phase of the reversal design). Weinrott, Corson, and Wilchesky (1979) reported similar findings using a dependent group-oriented contingency system in which target socially withdrawn children and their peers earned token reinforcement (points) for positive social interaction (positive peer interaction, social initiations, and volunteering in class).

It appears that group-oriented contingency systems are effective methods of both decreasing levels of inappropriate social behavior and increasing levels of social skills. Preliminary evidence suggests that an interdependent group-oriented contingency system may be a more effective behavior control technique than the dependent contingency system. Group-oriented contingencies appear to be viable means of social skills training with handicapped children, however, few studies have been done within the context of a regular classroom where mainstreaming a handicapped child was the focus or purpose of this investigation. Clearly, studies are needed which would evaluate the relative effectiveness of dependent, independent, and/or interdependent group-oriented contingency systems in training social skills to mainstreamed handicapped children. Also, sociometric data should be collected in these studies to assess peer perceptions of handicapped children.

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[1] Although Gamble and Strain (1979) refer to their two contingency systems as being interdependent and dependent, technically they are both interdependent. Under both sets of contingencies, reinforcement for the group depends upon the behavior of the group members as a whole, rather than one or two class members.

Home-based contingencies. Recently, there has been an increased interest in establishing cooperative efforts between home and school to control a variety of classroom behaviors (see Atkeson & Forehand, 1979, and Barth, 1979 for a review). Social skills training is no exception. In using home-based procedures, the teacher's responsibilities usually include specification of classroom rules, determination of rule violations, and communication of the child's behavior to the home. The parent's responsibility is one of dispensing rewards and/or sanctions to the child based on the teacher's report (Atkeson & Forehand, 1979). Basing reinforcement in the home not only involves parents directly in the educational and social development of their child, but it also frees the teacher from having to disrupt ongoing instruction to administer reinforcement.

Four studies in this review have used home-based contingencies to teach social skills to handicapped children. The social skills trained in each of these studies could be classified on the category of task-related behaviors in the social skill taxonomy proposed by Stephens (1978).

Coleman (1973) increased the frequency of on-task behavior (looking at reading material, writing, looking at teacher, responding appropriately to teacher questions) and decreased the frequency of two disruptive behaviors (talking aloud and out-of-seat) in an 11-year-old emotionally disturbed boy using home-based contingencies. A token system (points) was used to increase on-task behaviors and a response-cost procedure (loss of points) was used to decrease disruptive behaviors. After demonstrating functional control of these behaviors in the school, the reinforcement was transferred to the home. During this condition, the subject received a teacher rating on his behavior at the end of each week. The number of points on the rating determined the boy's allowance for that week. The home-based system was as effective as the school-based token system in increasing on-task behavior and decreasing disruptive behavior. Clark (1972) reported similar findings using home-based contingencies to decrease the frequency of talking-out behavior in several primary and secondary special education classrooms.

Home-based reinforcement systems appear to be effective in teaching appropriate classroom behavior to handicapped children. This has been demonstrated across a relatively large age range (primary through secondary-aged children) and across a variety of disruptive behaviors. It has been shown to be effective in mainstreamed classrooms (Coleman, 1973), self-contained classrooms (Clark, 1972; Cohen, Keyworth, Kliener, & Libert, 1971), and group-home environments (Bailey, Wolf, & Phillips, 1970). Much of the research on home-based contingencies, however, suffers from flawed methodologies such as inadequate designs, lack of monitoring, lack of systematic variation of treatment, and lack of studies isolating important independent variables such as note specificity, reward type, and note frequency. Although potentially effective, home-based programs should receive much more experimental rigor in future research to delineate the important variables in teaching social skills in the classroom.

DRO and DRL. Differential reinforcement of other behavior (DRO) and differential reinforcement of low rates of responding (DRL) have been used to train social skills in handicapped children. DRO consists of presenting reinforcement after any response except the target response. The individual is reinforced only when he or she is not performing the target response. For example, if an experimenter wishes to decrease aggressive behavior, any response except the target response (aggressive

behavior) would be reinforced. This has the effect of increasing all other responses and extinguishing the target response. DRL involves the delivery of a reinforcer for reductions in performance of the target behavior. Reinforcers may be delivered for reduction in the overall frequency of a response within a particular time period or an increase in the amount of time that elapses between responses. For example, if an experimenter wished to decrease talking-out behavior, he/she would reinforce an occurrence of talking out only if it followed the previous occurrence of talking out by some time limit (e.g., 5 minutes). Just as DRO, the purpose of DRL is to decrease target responses. DRO and DRL schedules have been used to control a variety of inappropriate behaviors including aggression and negative social interaction (Pinkston et al., 1973); tantrums, irrelevant verbal behavior, and "baby talk" (Zimmerman & Zimmerman, 1962); obscene language (Epstein, Repp, & Cullinan, 1978); and disruptive behavior (Dietz & Repp, 1973).

Pinkston et al. used a DRO schedule of reinforcement to decrease the aggressive behavior of a preschool male and positive reinforcement to increase appropriate peer interaction. The DRO procedure consisted of the teacher differentially reinforcing positive peer interaction (initiating to peers and responding to peers) and ignoring (extinction) the occurrence of aggressive behavior (choking, biting, poking, pushing, etc.). Aggressive behavior decreased and appropriate peer interaction increased under the DRO schedule and these results were maintained at one-month follow-up. Similar findings were reported by Zimmerman and Zimmerman using a DRO schedule to decrease tantruming and inappropriate verbal behavior and to increase appropriate verbal behavior in an emotionally disturbed male.

DRL schedules have been similarly effective in reducing offensive or inappropriate social behaviors. Dietz and Repp used a DRL schedule to reduce inappropriate talking of an entire EMR classroom. During the DRL contingency, students could earn reinforcement (two pieces of candy) if the entire class made five or fewer "talk-outs" in a 50-minute period. This was also a form of an interdependent group contingency because reinforcement for the group depended on the behavior of the class. The DRL schedule reduced inappropriate verbal behavior from a baseline average of 32.7 talk-outs per 50 minutes to an intervention (B phase) average of 3.13 talk-outs per 50 minutes. Epstein et al. reported similar findings using a DRL schedule to decrease obscene language in a class for the emotionally disturbed. Students earned tokens contingent on not emitting more than a specified number of obscene statements per day. This criterion was gradually shifting downward in a changing-criterion experimental design (DRL_3, DRL_2, DRL_1, and DRL_0) until the frequency of obscene statements was reduced to zero.

It appears that both DRO and DRL schedules are effective in decreasing the inappropriate social behavior of handicapped children. Both schedules seem to have applicability over various handicapped populations and they represent a nonaversive way of decreasing inappropriate behavior. Moreover, these schedules afford flexibility for teachers and other professionals in working with individuals, small groups, or total classes.

Timeout and negative attention. Timeout from positive reinforcement involves the removal of a child from a reinforcing situation for a period of time, immediately following the occurrence of an undesirable response. Negative attention is a mild social punishment procedure in which a teacher or other agent informs the child of

misbehavior and expresses disapproval concerning the misbehavior. Both procedures are punishment techniques intended to decrease behavior. Some writers (Jones & Miller, 1974) maintain that negative attention is preferable to timeout for decreasing high-rate, low-intensity, disruptive social behavior (e.g., interrupting, making inappropriate remarks, etc.) because timeout constitutes a major disciplinary intervention which is more powerful than is necessary to reduce the target behaviors.

Four studies in this review have used timeout to decrease inappropriate or disruptive social behavior. Three studies have used mentally retarded populations (Burchard & Barrera, 1972; Clark et al., 1973; Gresham, 1979) and one study used an emotionally disturbed population (Sachs, 1973). Jones and Miller (1974) used their negative attention procedure in a class for the emotionally disturbed.

Timeout appears to be extremely effective in decreasing disruptive, aggressive, and/or inappropriate social behaviors. Burchard and Barrera compared different durations of timeout (5 minutes or 30 minutes) to assess its effectiveness in eliminating the aggressive behaviors (swearing, bullying, fighting, etc.) of 11 mildly retarded adolescent males. A functional relationship between the magnitude of timeout and the degree of response suppression was demonstrated with higher magnitudes of timeout (30 minutes) resulting in greater suppression. There is some evidence to suggest that variable schedules of timeout may be nearly as effective as continuous timeout schedules. Clark et al. found that a VR_3 schedule of timeout reduced the aggressive behavior of an 8-year-old Down's Syndrome female to an average of three aggressive responses per hour. The continuous timeout schedule reduced aggressive behavior to an hourly average of one aggressive response. These data suggest that some intermittent timeout schedules may be nearly as effective as continuous schedules of punishment in controlling aggressive social behavior. Jones and Miller found that "negative attention" in which disruptive social behaviors of emotionally disturbed children were verbally corrected and punished was effective in decreasing the rate of these behaviors. This suggests that timeout is not always necessary to decrease certain low-magnitude, high-frequency behaviors (inappropriate comments, talking out, etc.).

Timeout and negative attention appear to be effective in reducing aggressive and/or disruptive social behavior of handicapped children so that more appropriate behavior can be reinforced. None of the studies reviewed have investigated the effectiveness of timeout or negative attention in mainstreamed classrooms. Additionally, none of these studies attempted to socially validate changes in target behaviors via peer or teacher ratings.

Summary of consequent control techniques. At least nine consequent control techniques have been used to train social skills in handicapped children. Virtually all of these techniques have been shown to be effective in either increasing rates of positive social interaction or decreasing rates of negative social interaction. Very few of the studies reviewed have implemented these consequent techniques within mainstreamed classrooms. The literature certainly suggests that these techniques would be effective in regular classrooms, but research investigating the efficacy of these techniques in teaching social skills for successful mainstreaming is sparse.

Contingent social reinforcement can increase the level of certain social skills in handicapped children. One drawback to this technique is the amount of teacher time involved in reinforcing target behaviors. Token systems and primary reinforcement systems are also effective social skills training strategies. A large disadvantage of

these approaches is that they require perhaps even more teacher time to administer than social reinforcement approaches. Also, regular classroom teachers probably would not be inclined to set up a comprehensive token system for one or two mainstreamed handicapped children. Even if they did, this "special treatment" may unduly stigmatize the target children. As previously mentioned, it is doubtful that primary reinforcement is an appropriate technique in mainstreamed classrooms because children requiring this intervention are typically severely handicapped and are not mainstreamed.

Group contingencies are effective in controlling many forms of disruptive behavior in special education classrooms. We have little evidence that this approach would be effective in mainstreamed classrooms. Moreover, there is a strong possibility that when using dependent or interdependent group contingencies, the handicapped child may be the target of ridicule or pernicious peer pressure for "spoiling" the reward for the rest of the group. Future research should address this issue as well as look at changes in sociometric status as a function of group contingency type. Home-based contingencies are also effective in training social skills but much of the research suffers from certain methodological flaws. These flaws include: (1) inadequacy of designs, (2) lack of monitoring and supervision of home and school programs, (3) lack of comparative studies investigating such variables as specificity of notes, type of reward, and frequency of notes. Home-based contingencies have been successfully used in self-contained as well as mainstreamed classroom settings.

DRO, DRL, timeout, and negative attention all have shown success in decreasing rates of disruptive or aggressive responding and increasing rates of positive social interaction when used in conjunction with reinforcement procedures. Most of these studies have been conducted with handicapped populations within the context of special education classrooms. We have little evidence that these approaches would be effective in mainstreamed classrooms or if regular class teachers would be amenable to using these procedures to increase the social competence level of handicapped children.

Perhaps the most critical issues concerning the use of consequent techniques are those of generalization and maintenance. Generalization might occur across situations, behaviors, and/or subjects, but the most critical type of generalization for social skills training is stimulus generalization (across situations). Without stimulus generalization, social skills trained for in one setting will not occur in other settings. Thus, without stimulus generalization, social skills training would be a waste of time because social skills would occur only in the training setting. Maintenance of responding is similarly critical. Maintenance refers to the continued occurrence of social skills over time. Social skills are not useful unless they are performed over time. Showing short-term increases in social skill level does not ensure social competence.

Of the 33 studies reviewed, approximately 6 percent (n = 2) of them have assessed or demonstrated generalization of social skills. Buell et al. (1968) demonstrated generalization across behaviors (i.e., touching other children, verbalizations to other children, cooperative and parallel play). Nash et al. (1979) demonstrated generalization across stimulus conditions (e.g., from familiar adults to strangers to children in the classroom). This paucity of evidence regarding generalization of responding across behaviors and stimulus conditions severely limits the utility of consequent

approaches in training social skills for mainstreaming. Generalization, as Stokes and Baer (1977) argue, should be actively programmed rather than passively expected. Unfortunately, most social skills training studies have been guilty of passively expecting generalization to occur rather than actively training for generalization.

The evidence for maintenance of responding is better, but not particularly impressive, with 21 percent (n = 7) of the studies demonstrating maintenance of responding (Brown et al., 1974; Drabman, 1973; Gresham, 1979; Jones & Miller, 1974; Nash et al., 1979; Pinkston et al., 1973; Weinrott et al., 1979). Length of maintenance reported ranged from 5 days (Brown et al., 1974) to 3 months (Gresham, 1979). Much more follow-up research needs to be done to assess the long-term maintenance, if any, of trained social skills over time.

Modeling

Modeling has been used effectively to teach social skills to handicapped children. Modeling can be divided into two types: (1) *live modeling*, in which the target child observes the social behaviors of models in naturalistic (e.g., classrooms, playground) or laboratory/clinic situations and (2) *symbolic modeling*, in which a target child observes the social behaviors of a model via videotape/film format. Bandura (1977) maintains that the cognitive processes which facilitate modeling effects (i.e., verbal and imaginal coding and rehearsal) are identical whether they be presented in live or symbolic format although live and symbolic modeling may not be equally effective. There have been no direct comparisons between live versus symbolic modeling in training social skills. It may be that live modeling would be more effective than symbolic modeling with populations whose conceptual and verbal skills are underdeveloped (e.g., mentally retarded, autistic, etc.) because these populations would have difficulty in coding and rehearsing behaviors symbolically (Bandura, 1977).

Many proponents of mainstreaming assume that placement of handicapped children into regular classrooms will result in those handicapped children imitating or emulating the appropriate social and academic behaviors of their peers. Modeling theory (Bandura, 1969, 1977) and the bulk of research in the area of modeling and social skills training with handicapped children (Apolloni, Cooke, & Cooke, 1977; Cooke, Apolloni, & Cooke, 1977; Marburg, Houston, & Holmes, 1976; Peterson, Peterson, & Scrivin, 1977; Synder, Apolloni, & Cooke, 1977; Strain, Shores, & Kerr, 1976) do not support this assumption. For modeling effects to occur, the target child must attend to relevant modeling stimuli, retain the information or stimuli which are modeled, have the motoric-reproduction processes necessary to execute the modeled behavior, and have some incentive or motivation for performing the observed behavior (Bandura, 1969, 1977). Moreover, the research concerning the use of modeling with handicapped children (see above) suggests that modeling effects do not occur unless specific teaching procedures are employed (calling attention to the model, reinforcing the model, using competent models, etc.).

Live modeling. Four studies reviewed used live modeling to train social skills (Marburg et al., 1976; Morris & Dolker, 1974; Petersen et al., 1977; Strain et al., 1976b). Strain et al. directed prompting and social reinforcement to target children to increase positive social interaction rates (cooperative responses, hugging, sharing, etc.) of nontarget children. Prompting and social praise directed to behaviorally handicapped target children not only increased their rates of positive social interac-

tion but also increased rates of positive social interaction of nontarget children. Strain et al. explained these results in terms of "spillover effects" or vicarious reinforcement in which nontarget children imitated those behaviors they observed resulting in positive outcomes (teacher praise). These findings suggest that positively reinforcing children in classroom settings for positive social interaction may result in nonreinforced children adopting those behaviors that they observe being reinforced. Similar findings were reported by Morris and Dolker who used live modeling to increase cooperative responding of six severely retarded children.

Bandura posits that high-prestige models are emulated more than low-prestige models. Peterson et al. tested this hypothesis on a group of mentally retarded and nonhandicapped preschoolers. Using either a handicapped or nonhandicapped model, they found that both handicapped and nonhandicapped preschoolers were more likely to imitate a nonhandicapped model. This finding was not due to differences in ability to model or sociometric popularity, since these were controlled in the study. This suggests that nonhandicapped children may be more effective models of social behavior than handicapped children.

Another variable which appears to facilitate modeling effects is the use of multiple rather than single models. There are several advantages to using multiple models: (1) the odds that the observer will select at least one model to imitate are increased, (2) multiple exposures to the target behavior are provided, and (3) exposure to multiple models facilitates generalization (Bandura, 1977). Marburg et al. (1976) tested this hypothesis using a group of institutionalized mentally retarded children. Children in the multiple-model condition imitated significantly more behaviors (hugging a doll, play skills, etc.) than children in the single-model condition. Moreover, these effects generalized to novel behaviors (response generalization) and to new experimenters (stimulus generalization). While these data suggest that multiple models may facilitate modeling effects on simple behaviors, it remains to be demonstrated that live modeling using multiple models would be successful with more complex social skills in more naturalistic environments such as public school classrooms. Mainstreaming is, in part, based on the assumption that the handicapped child is exposed to multiple models which he or she will imitate in the classroom setting. The evidence to date does not support the assumption that handicapped children will automatically attend to or retain the positive social behaviors of their nonhandicapped peers.

Symbolic modeling. Symbolic modeling has been used to teach social skills to a variety of populations. Most of the research using symbolic modeling has been conducted with nonhandicapped preschoolers who were evidencing problems in social interaction. These studies are reviewed here because of their potential relevance to handicapped populations. A few studies have been done with mentally retarded populations and are also reviewed in this section.

Nine studies have used symbolic modeling to increase social interaction rates in socially withdrawn preschoolers. The pioneering study was done by O'Connor (1969) who showed a 23-minute modeling film to withdrawn preschoolers. The film depicted multiple models becoming increasingly involved in social interaction and being reinforced for doing so. Control children viewed a 20-minute nature film. Children viewing the modeling film significantly increased their rates of social interaction in a posttest situation (i.e., the classroom), but no maintenance data were collected. In a subsequent study, O'Connor (1972) showed the same modeling film to socially

withdrawn preschoolers and found similar results. Increased levels of social interaction were maintained at a 3-week follow-up. Comparable findings have been reported by others using O'Connor's (1969) modeling film (Evers & Schwarz, 1973; Evers-Pasquale, 1978; Evers-Pasquale & Sherman, 1975) or analogous film modeling methodologies (Jakibchub & Smeriglio, 1976; Keller & Carlson, 1974). These studies suggest that relatively brief exposures to modeling films depicting children engaging in social interaction with other children is effective in increasing social interaction rates, and these improvements are maintained for up to 4 weeks. The only exceptions are the Keller and Carlson (1974) study, which failed to obtain maintenance at 3-week follow-up, and the Gottman (1977b) study, which failed to show modeling effects with disadvantaged preschoolers.

Narration has been shown to facilitate the effectiveness of modeling films. Bandura (1969, 1977) maintains that narration enhances attention to critical behaviors exhibited by the model and promotes verbal labeling of such behaviors. Jakibchub and Smeriglio investigated the variable of film narration to determine the facilitative components of narrated modeling films. Identical modeling films were narrated either in the *third person* ("She is talking and playing with others.") or *first person* ("I am talking and playing with others.") for two groups of socially withdrawn preschoolers. First-person narration significantly increased the social interaction rates of withdrawn preschoolers. The third-person narration failed to increase social interaction rates over control groups, which represents a failure to replicate earlier studies (Evers & Schwarz, 1973; Evers-Pasquale, 1978; Evers-Pasquale & Sherman, 1975; Keller & Carlson, 1974; O'Connor, 1969, 1972). There are perhaps two reasons why first-person narration was effective. First, the first-person narration could have increased the perceived similarity between the subjects and the models. Research indicates that the closer the similarity between the subject and the model, the greater the modeling effect (Bandura, 1969, 1977). Second, the first-person narration could have have resulted in higher levels of attention, which would enhance modeling effects. The Jakibchub and Smeriglio (1976) study is consistent with recent work in the area of cognitive behavior modification (see Meichenbaum, 1977) which emphasizes the efficacy of "self-speech" in training social skills.

Two studies suggested that symbolic modeling may not be effective in increasing the social interaction rates of disadvantaged withdrawn preschoolers (Geller & Scheirer, 1978; Gottman, 1977b). Both of these studies were conducted with preschoolers enrolled in Head Start programs. Geller and Scheirer (1978) used three specially prepared 10-minute videotapes showing models engaging in cooperative play and positive social interaction. Gottman (1977b) used the previously described 23-minute O'Connor (1969) film. Neither study demonstrated significant differences in social interaction rates between those who viewed the modeling films and those who viewed control films. These findings, however, should not be interpreted as conclusive evidence that symbolic modeling will not be effective in teaching social skills to disadvantaged populations. For example, because the models used in the films were white middle-class preschoolers, the disadvantaged observers (mostly lower-class blacks) might not have attended to or retained the modeled behaviors. This model-behavior dissimilarity could have weakened the modeling effect. Moreover, the disadvantaged children might have perceived middle-class models as being more *competent* and subsequently did not model their behavior. Most modeling

research suggests that children and adults tend to imitate behaviors exhibited by a *coping* model more so than behaviors exhibited by a *mastery* model (Bandura, 1969, 1977; Thelen et al., 1979). Future research using symbolic modeling with disadvantaged populations should make efforts to achieve model-observer similarity and present *coping* rather than *mastery* models.

Three studies have used some form of symbolic modeling to teach social skills to mentally retarded populations (Becker & Glidden, 1979; Fechter, 1971; Talkington & Altman, 1973). All of these studies must be viewed only as indirect evidence of the efficacy of symbolic modeling in teaching social skills, since only laboratory-type tasks were used (e.g., responses to Bobo doll, etc.). The primary focus of these studies was to demonstrate modeling effects in the mentally retarded rather than to directly train social skills. Socially relevant behaviors (aggression, affection, friendliness, off-task social behavior, etc.) were, however, used in the modeling films.

Becker and Glidden (1979) found that EMR males imitated a high-competent peer model more than a low-competent peer or adult models. This might suggest that beneficial effects would accure from placing EMR children in situations where they can interact with socially competent persons (i.e., mainstreamed environments). However, as stated previously, simple physical placement of handicapped children in the presence of their nonhandicapped peers does not ensure that modeling effects will occur. Fecher (1971) showed aggressive and nonaggressive, institutionalized retardates an "aggressive" or "friendly" television film. His results showed that the frequency of aggressive responses increased for both groups after the "aggressive" film and the frequency of friendly responses increased after viewing the "friendly" film. These effects, however, only occurred in a posttest situation in the experimental room and did not generalize to the ward. One reason for these findings could be that the degree of dissimilarity between the modeled behavior (friendly or aggressive interaction with a Bobo doll) and subsequent behaviors in a naturalistic setting (i.e., on the ward with peers) was great. To train "friendly" behaviors (e.g., sharing, cooperation, positive verbalization, etc.) one should develop modeling films depicting the desired terminal behaviors as closely as possible. This should enhance generalization across settings and behaviors as well as contribute toward maintenance over time.

One study demonstrated differential modeling effects as a function of the severity of mental retardation. Talkington and Altman (1973) found that mildly retarded children modeled significantly more behavior (aggressive and affectual) than severely retarded children after viewing modeling films. These results suggest that severely/profoundly retarded children might not have the attentional, retentional, or motor-reproduction processes necessary to derive maximum benefits from symbolic modeling treatments for social skills training.

Summary. Both live and symbolic modeling have been effective in training social skills, although most of the symbolic modeling research has been done with nonhandicapped preschool populations. Most of the live modeling research has been done with either behaviorally handicapped or mentally retarded populations. Although modeling appears to be effective in increasing rates of social interaction, cooperative responding, sharing, and other social skills, only one of the reviewed studies collected sociometric data (Gottman, 1977b) to socially validate behavior change. This lack of

social validation seriously calls into question the meaningfulness of behavior change shown in these studies.

Of the 17 modeling studies reviewed, almost 44 percent (n = 7) of them assessed generalization. Typically, generalization across settings was assessed in the symbolic modeling studies by showing the films in one setting and taking behavioral observations of social interaction rates in classroom or free-play settings. Only one live modeling study assessed generalization (Marburg et al., 1976). Fewer studies reported maintenance data with only 29 percent (n = 5) assessing maintenance over time. Of those studies assessing maintenance, 3 weeks was the modal time period elapsing between posttest and follow-up. None of the studies reviewed has evaluated generalization of modeling effects to mainstreamed classrooms. Without this research, it is unclear what effects modeling would have on generalizing trained social skills to mainstreamed classrooms and how nonhandicapped peers would perceive these new social competencies. Clearly, modeling research needs to be conducted with the intention of assessing the effects of treatment in mainstreamed classrooms and socially validating the results through peer and teacher ratings of social behavior before and after treatment.

Cognitive Behavioral Techniques

Recently, there has been an increased interest in the use of cognitive-behavioral techniques to teach social skills. Much of the impetus for this research has come from the work of Meichenbaum (1977). According to Meichenbaum, all cognitive behavior modification techniques usually have one thing in common: the child is taught to use mediating responses that exemplify a general strategy for controlling behavior under a variety of stimulus conditions. For example, an aggressive child could be taught to verbalize several alternative nonaggressive responses to himself or herself before responding impulsively. In this sense, cognitive behavioral techniques are typically used to teach social skills that are the result of self-control deficits, although they can also be used to remediate skills deficits. Recent articles have comprehensively reviewed the literature of self-control training in children (Hobbs, Moguin, Tyroler, & Lahey, 1980; Kendall & Hollon, 1979; O'Leary & Dubey, 1979; Rosenbaum & Drabman, 1979). Thus, no attempt will be made to thoroughly review this literature, except where social skills training was the focus of the investigation. The purpose of this section is to review the social skills training literature that has employed some form of cognitive behavior modification. Several studies in this section, especially the coaching studies, have used nonhandicapped populations. The literature can be divided into two major areas: coaching or instructional techniques and self-control techniques. What follows is a review of these techniques.

Coaching. Coaching is a direct verbal instruction technique which has been successfully used to train social skills in nonhandicapped populations. Coaching involves verbally instructing children in social skills and these skills are rehearsed or role-played in nonthreatening situations. Typically, the coaching strategy involves: (1) presentation of rules and standards for behavior, (2) behavior rehearsal with the coach and/or peer partner, and (3) feedback from the coach on performance as well as discussions and suggestions for future performances. The increased conceptual and verbal components of coaching might explain why it has not been used as a singular social skills training technique with severely handicapped populations. Four studies in this review used coaching to teach social skills to nonhandicapped

populations (Gottman, Gonso, & Schuler, 1976; Gresham & Nagle, 1980; Oden & Asher, 1977; Zahavi & Asher, 1978).

Oden and Asher conducted one of the initial well-designed coaching studies with children. The authors used a coaching procedure to train social skills (e.g., participation, cooperation, communication, and validation support) to a group of third- and fourth-grade students. Coaching was effective in increasing target children's acceptance on a "play with" sociometric rating scale. These gains in sociometric acceptance were maintained at a 1-year follow-up. These results suggest that coaching might promote long-term retention of trained social skills. In a related study, Gottman et al. (1976) used coaching to teach friendship-making skills to two socially isolated females. Friendship skills included the following sequences: (1) greeting, (2) asking for and giving information, (3) extending an offer of inclusion, and (4) effective leave taking. Referential communication skills in which the children were coached in how to take the listener's perspective were also coached. Coaching led to an increase in sociometric status of target children as measured by sociometric measures. Also, the target children did not increase but redistributed their social interaction to new friends. The impact of this study is weakened by the fact that only two children were trained and that coaching appeared to be confounded with modeling (via 10-minute film vignettes of models performing target behaviors).

One study has compared the relative effects of modeling and coaching using both sociometrics and naturalistic observations of trained social skills as dependent measures. Gresham and Nagle (1980) compared modeling, coaching, and a combination of modeling plus coaching as social skills training strategies on groups of third- and fourth-grade students. The above strategies were essentially equivalent in training social skills as measured by both sets of dependent measures and all strategies were superior to an attention-control group. One exception was that the two treatments that contained a coaching component (coaching and modeling plus coaching) were more effective in inhibiting rates of initiating and receiving negative social interaction than the modeling condition in isolation. This suggests that coaching might be effective as a self-control technique in inhibiting negative or aggressive social behavior.

Some support for this hypothesis can be found in a study by Zahavi and Asher (1978) who used coaching to decrease the aggressive behavior of preschoolers. The coaching procedure involved teaching three concepts: (1) aggression hurts another person and makes the person unhappy; (2) aggression does not solve problems; and (3) positive ways to solve conflicts are sharing, taking turns, and playing together. Each concept was taught in a secluded corner of the classroom. The coach (teacher) asked the child two questions concerning the effect aggression has on others and prompted responses to these questions. Each child was coached on one occasion only for 10 minutes. Results from a time-lagged design showed that coaching was effective in decreasing aggressive behavior in the classroom. Although coaching effectively reduced aggressive behavior, caution must be exercised in generalizing these results to handicapped populations such as the mentally retarded. Because the mentally retarded, as a group, have deficits in conceptual and language skills, verbal instructional techniques such as coaching might not effectively control aggressive behavior in this population.

Two studies have used coaching in addition to other behavioral techniques to teach social skills. Cooke and Apolloni (1976) used a combination of coaching, live

modeling, and praise to teach smiling, sharing, positive physical contacting, and verbal complimenting to four learning-disabled children. These social skills not only generalized across settings (to the classroom) and across subjects (to untrained children), but also were maintained at a 4-week follow-up. Bornstein, Bellack, & Hersen (1977) used similar techniques to teach assertiveness skills to unassertive 8 to 11-year-old children. The combination of coaching, feedback, behavior rehearsal, and praise lead to increases in speech loudness, children's ratio of eye contact to speech duration, number of requests for new behavior, and ratings of overall assertiveness in a role playing assessment situation. The changes in social skills generalized to untrained role-play situations with adults and were maintained at 2- and 4-week follow-ups.

Four studies have trained conversation-related social skills to both mentally retarded and juvenile delinquent populations using combinations of instructions, modeling, behavior rehearsal, praise, and/or token reinforcement. Arnold, Sturgis, and Forehand (1977) used role playing, live modeling, verbal prompting, and social reinforcement to teach the mother of a 15-year-old mentally retarded adolescent to teach her daughter conversation skills. The mother used live modeling, feedback, and social reinforcement to increase her daughter's number of "on-topic" questions and "encourages to talk" over 14 sessions. Bondy and Erickson (1976) demonstrated increases in question-asking behavior in a group of mentally retarded children using a combination of live modeling plus token reinforcement. Modeling plus reinforcement was more effective in increasing rates of question-asking than either modeling or token reinforcement used in isolation. Minken et al. (1976) used a combination of instructions, modeling, and behavior rehearsal to increase rates of questioning, positive conversational feedback, and time spent talking in four predelinquent adolescent females. Training increased the use of these conversational behaviors which were "socially validated" by 15 adult judges who rated videotapes of subjects' conversations as being more appropriate after training. *Social validation*, as used in this study, is an important component of behavioral assessment because it provides a measure of the *quality* and *significance* of trained social skills by those in the child's environment who are in a position to evaluate and/or judge the appropriateness of the child's behavior. Similar findings were reported by Maloney et al. (1976) using instructions, feedback, and token reinforcement.

Self-control techniques. Teaching children to evaluate and control their own behavior has been an effective social skills training strategy. The typical procedures in these studies have been self-reinforcement, self-evaluation, and/or self-instruction of behavior. Self-reinforcement involves the self-administration of rewards contingent on behavior. In other words, the persons observe and evaluate their own behavior and avail themselves of reinforcement if their behavior meets some preestablished external criterion. As a result of this self-evaluation or assessment, the individual may or may not receive reinforcement depending on whether or not the criterion for acceptable performance has been met. The reinforcement received may be either self-administered or externally administered. Self-instruction is defined as verbal statements to oneself which prompt, direct, or maintain behavior (O'Leary & Dubey, 1979). The spelling rule of "i before e except after c" is an example of a self-instructional technique which facilitates the performance of a correct response. The following studies have used some type of self-control technique to teach social skills.

Two studies have attempted to reduce the socially disruptive behavior of emotion-

ally disturbed adolescents in a hospital school. Kaufman and O'Leary (1972) used self-evaluation (subjects' ratings of classroom behavior) subsequent to interventions under token reward and response cost conditions. Self-evaluation of social behavior maintained low levels of classroom disruptiveness equivalent to that achieved under the reward and cost procedures. Santogrossi et al. (1973) found negative results using self-evaluation of behavior. Self-evaluation (subjects rated their own behavior on a 0 to 2 scale) did not reduce disruptive behavior significantly below baseline levels. Only when teachers determined reinforcement, based on their evaluation of the children's behavior, did disruptive behavior decrease. The differential results from these two studies may be partially attributable to the methodologies used in each. That is, in the Kaufman and O'Leary study, the subjects had been in a teacher-administered token program for 25 days before they were allowed to self-evaluate behavior. In the Santogrossi et al. study, subjects were in a teacher-administered token program for only 9 days before the self-evaluation phase. The longer exposure to the token system in the Kaufman and O'Leary study could have resulted in the subjects learning how to more accurately evaluate their own behavior. Also, the self-evaluation phase in the Kaufman and O'Leary study was preceded by both token reward and response cost phases, whereas this was not the case in the Santogrossi et al. study. It is difficult to draw any conclusions regarding the effectiveness of self-evaluation of behavior in emotionally disturbed adolescents because the two studies reviewed used somewhat different methodologies. It could be that self-evaluation is more effective when it is preceded by both *reinforcement* and *punishment* phases than when it is preceded by a reinforcement phase alone.

Three studies have used self-evaluation of behavior to control the disruptive behavior of children in remedial or regular classrooms. Drabman, Spitalnik, and O'Leary (1973) taught self-evaluative behavior to eight disruptive 9- and 10-year-old boys in an after-school remedial reading class. Disruptive behavior was initially controlled by a teacher-administered token system in which points were given for appropriate behavior (on-task, sitting in seat, being quiet, not disturbing others, etc.). Subsequent to the teacher-administered phase, subjects were reinforced for accurately matching the teacher's evaluations of their behavior (Matching Phase). Matching was faded over a period of time so that reinforcement was entirely self-determined. Self-evaluation was as effective as the teacher-administered phase in controlling disruptive social behavior. Moreover, low levels of disruptiveness were maintained when all checking of self-evaluations was eliminated and those low rates of disruptive behavior generalized to periods when no token or back-up reinforcement was available (generalization across stimulus conditions). Similar results were obtained by Bolstad and Johnson (1972) who found self-evaluation and self-reinforcement to be slightly more effective in controlling disruptive behavior than external regulation (teacher-determined reinforcement). Turkewitz, O'Leary, and Ironsmith (1975) taught self-evaluative behavior to eight disruptive children in an after-school reading tutorial program. Their methodology and results were similar to the Drabman et al. (1973) study (teacher-administered phase, matching phase, and fading phase). Turkewitz et al., however, did not find generalization of appropriate social behavior to the target subjects' regular classroom, although generalization to nontoken intervals (intervals in which reinforcement was not available) and maintenance for 1 week after program termination were realized. It appears that self-evaluation used alone does not effect significant changes in behavior, at least for children with a history of behavior

difficulties. Only when self-evaluation is used in conjunction with and is preceded by periods of teacher-administered token reinforcement does it effectively control disruptive social behavior. However, it appears that self-evaluation is as effective as externally-administered token programs when preceded by teacher-administered reward phases (Bolstad & Johnson, 1972). Self-evaluation may be useful for maintaining effects when other interventions are withdrawn (e.g., token reinforcement) and seems to facilitate maintenance of treatment gains in the absence of token reinforcement (O'Leary & Dubey, 1979). Generalization has been demonstrated across stimulus conditions (token versus nontoken phases), but generalization across settings (i.e., from special classes to regular classes) has not adequately been documented.

Two studies in this review used variations of Meichenbaum and Goodman's (1971) cognitive self-guidance treatment program with impulsive children. Camp et al. (1977) modeled cognitive strategies and trained aggressive children to develop answers to four basic questions: What is my problem? What is my plan? Am I using may plan? How did I do? Treatment group children were taught to "think aloud" during a 6-week training period. Experimenters modeled these questions (see above) and answers to them. Modeling was gradually faded and children subsequently planned strategies at a covert level. Cognitive self-guidance led to improved overall social behavior as measured by teacher ratings of prosocial behavior. No significant differences between groups were demonstrated on teacher ratings of aggressive behavior. Using similar procedures, Bornstein and Quevillon (1976) reduced off-task and disruptive behavior of three preschool boys. Prompts to covertly rehearse strategies after training were provided to enhance generalization to the classroom setting and maintenance of responding was documented 22.5 weeks after treatment. Investigation of covert rehearsal as a facilitator of behavioral generalization across settings and maintenance over time merits further attention.

Conclusions and Future Directions

The current state of the literature suggests that social skills training with handicapped children has the potential of facilitating mainstreaming efforts. Several studies have shown that handicapped children are better accepted by their peers after social skills training (Aloia et al., 1978; Ballard et al., 1978; Rucker & Vincenzo, 1970). Numerous other studies reviewed in this paper have demonstrated increases in social interaction rates of handicapped children after social skills training. While this is encouraging, there are several areas of concern in the social skills training literature.

First, there is a lack of an adequately developed theory regarding which social skills need to be selected and their subsequent impact on handicapped children's interpersonal relationships. It may be necessary to classify behaviors according to the relevancy to social performance at different developmental levels (Van Hasselt et al., 1979). This is particularly true for handicapped children because their developmental level of social competence is likely to be below that of their nonhandicapped peers. Social skills should be selected empirically on the basis of which skills discriminate handicapped from nonhandicapped children. Discriminant analysis research such as that done by Gottman (1977a) with socially isolated children should help in establishing an empirical basis for social skills selection.

A second and perhaps equally important deficiency in the literature is the overall

failure to demonstrate which social skills in which settings result in predictable effects. That is, we do not have adequate evidence concerning the impact of social skills training on "socially valid" measures of social competence. Very few studies have been conducted within the context of mainstreamed classrooms using peer and teacher ratings of handicapped children after social skills training. Such research must be done before we can assess the social validity of social skills training programs for handicapped children.

Third, the evidence regarding generalization and maintenance of trained social skills is severely deficient. Only a few studies have demonstrated generalization of trained social skills to other settings. Given this lack of evidence regarding generalization across settings, the potential of social skills training for mainstreaming purposes may be questioned by some. Generalization, however, should not be passively expected, but actively programmed (O'Leary & Drabman, 1971: Stokes & Baer, 1977). Training for generalization should receive as much attention and emphasis as training for the acquisition of social skills if mainstreaming efforts are to be successful in facilitating peer and teacher acceptance of handicapped children. Inclusion of nonhandicapped peers in the training situation represents one way of promoting generalization. This should be particularly workable and effective when using coaching, live modeling, and behavior rehearsal techniques.

Evidence for maintenance of trained social skills is similarly lacking. Only one study reviewed demonstrated long-term maintenance. Oden and Asher (1977) showed that increases in peer acceptance were maintained at a 1-year follow-up with a group of nonhandicapped children. Most demonstrations of maintenance have been on the order of from 2 to 4 weeks. Many studies simply have not reported maintenance data. Future research should program and assess maintenance of trained social skills over longer periods of time. Once taught, social skills should maintain themselves since they have a high probability of being "trapped into natural communities of reinforcement" (Baer & Wolf, 1970, p. 320).

A fourth area that merits attention concerns the training of nonhandicapped children in accepting and interacting with mainstreamed handicapped children. In other words, improving handicapped children's social interaction might be a two-way street: attention must be paid to both handicapped and nonhandicapped participants in the interaction. Modeling films could be developed which portray nonhandicapped models interacting with and accepting handicapped children in mainstreamed classrooms. To date, there is little, if any, research which has investigated the effects using social learning theory techniques such as modeling, coaching, role playing, and so forth with nonhandicapped children to facilitate positive social interaction and peer acceptance of handicapped children.

Finally, there is a need to investigate more fully the social skills technique by type-of-handicapped child interaction. That is, we need to know which techniques will or will not be successful with which type of handicapped child. It is not surprising that manipulation of antecedents and consequences have been most successful with the more severely handicapped populations. By the same token, the more cognitively-based techniques such as modeling, coaching, and self-control training have been most successful with either mildly handicapped or nonhandicapped populations. Research is needed that would investigate how the more cognitively-based techniques could be adapted for handicapped children who are cognitively less sophisticated. It could be that modeling films would have to be modified by portraying fewer and less

complex behaviors. Moreover, the narration may have to be greatly simplified in order to enhance comprehension and subsequent coding of modeled behaviors. Coaching techniques may have to include less complex concepts and might require more repetition in the behavior rehearsal phase. Self-instruction may have to include fewer steps and be simplified as well as the self-reinforcement and self-evaluation strategies. All of these factors need to be investigated so that their effectiveness as social skills training techniques can be evaluated.

A related issue is that of technique comparison. Much of the research in social skills training studies has used single-subject designs with a multicomponent treatment package. Although single-case designs possess good internal validity (Hersen & Barlow, 1976; Kratochwill, 1978; Sidman, 1960), it is difficult to assess the relative contribution of each component on the acquisition of social skills. This is particulary true of multiple baseline designs. A similar criticism can be made about group designs that use multiple training components (modeling, coaching, social reinforcement, etc.) as part of the independent variable. Factorial experimental designs are needed which would assess the effects of different training techniques independently and also use age, sex, type, and/or severity of handicap as blocking factors. Through this type of research, we could establish which techniques are most effective with which populations.

Reference Notes

1. Asher, S. R. & Markell, R. A. *Peer relations and social interaction: Assessment and intervention.* Unpublished manuscript, University of Illinois, 1978.
2. Asher, S. R. *Coaching socially isolated children in social skills.* Paper presented at the annual meeting of the Association for Advancement of Behavior Therapy, Atlanta, December, 1977.
3. Stephens, T. M. *Personal communication.* April 8, 1980.

References

Aloia, G. F., Beaver, R. J., & Pettus, W. F. Increasing initial interactions among integrated EMR students and their nonretarded peers in a game-playing situation. *American Journal of Mental Deficiency*, 1978, *82*, 573–579.

Allen, K. E., Benning, P. M., & Drummond, T. W. Integration of normal and handicapped children in a behavior modification preschool: A case study. In G. Semb (Ed.), *Behavior analysis and education.* Lawrence, Kan.: University of Kansas Press, 1972.

Allen, K. E. et al. Effects of social reinforcement on isolate behavior of a nursery school child. *Child Development*, 1964, *35*, 511–518.

Apolloni, T., Cooke, S. A., & Cooke, T. P. Establishing a normal peer as a behavioral model for developmentally delayed toddlers. *Perceptual and Motor Skills*, 1977, *44*, 231–241.

Arnold, S., Sturgis, E., & Forehand, R. Training a parent to teach communication skills: A case study. *Behavior Modification*, 1977, *1*(2), 259–276.

Asher, S. R., & Hymel, S. Children's social competence in peer relations: Sociometric and behavioral assessment. In J. D. Wine & M. D. Smye (Eds.), *Social competence.* New York: Guilford Press, 1980.

Asher, S. R., Oden, S. L., & Gottman, J. M. Children's friendships in school settings. In L. G. Katz (Ed.), *Current topics in early childhood education* (Vol. 1). Norwood, N. J.: Ablex, 1977.

Asher, S. R., & Renshaw, P. D. Children without friends: Social knowledge and social skills training. In S. R. Asher & J. M. Gottman (Eds.). New York: Cambridge University Press, in press.

Asher, S. R., Renshaw, P. D., Geraci, R. L., & Dor, A. K. *Peer acceptance and social skill training: The selection of program content.* Paper presented at the biennial meeting of the Society for Research in Child Development, San Francisco, 1979.

Asher, S. R., Singleton, L. C., Tinsley, R. R., & Hymel, S. A reliable sociometric measure for preschool children. *Developmental Psychology*, 1979, *15*, 443–444.

Atkeson, B. M., & Forehand, R. Home-based reinforcement programs designed to modify classroom behavior: A review and methodological evaluation. *Psychological Bulletin*, 1979, *86*, 1,298–1,308.

Baer, D. M., & Wolf, M. M. The entry into natural communities of reinforcement. In R. Ulrich, T. Stachnik, & J. Mabry (Eds), *Control of human behavior: Volume II.* Glenview, Ill.: Scott, Foresman, 1970.

Bailey, J. S., Wolf, M. M., & Phillips, E. L. Home-based reinforcement and the modification of pre-delinquents' classroom behavior. *Journal of Applied Behavior Analysis*, 1970, *3*, 222–233.

Ballard, M., Corman, L., Gottlieb, J., & Kaufman, M. J. Improving the social status of mainstreamed retarded children. *Journal of Education Psychology*, 1978, *69*, 605–611.

Bandura, A. *Principles of behavior modification.* New York: Holt, Rinehart, & Winston, 1969.

Bandura, A. *Social learning theory.* Englewood Cliffs, N.J.: Prentice-Hall, 1977.

Barth, R. Home-based reinforcement of school behavior: A review and analysis. *Review of Educational Research*, 1979, *49*, 436–458.

Becker, S., & Glidden, L. M. Imitation in EMR boys: Model competency and age. *American Journal of Mental Deficiency*, 1979, *83*, 360–366.

Bellack, S. A. Behavioral assessment of social skills. In A. S. Bellack and M. Hersen (Eds.), *Research and practice in social skills training.* New York: Plenum Press, 1976.

Berry, P., & Marshall, B. Social interactions and communication patterns in mentally retarded children. *American Journal of Mental Deficiency*, 1978, *83*, 44–51.

Birnbrauer, J. S. Mental retardation. In H. Leintenberg (Ed.), *Handbook of behavior modification and behavior therapy.* Englewood Cliffs, N.J.: Prentice Hall, 1976.

Bolstad, O. D., Johnson, S. M. Self-regulation in the modification of disruptive classroom behavior. *Journal of Applied Behavior Analysis*, 1972, *5*, 443–454.

Bondy, A. S., & Erickson, M. T. Comparison of modeling and reinforcement procedures in increasing question-asking of mentally retarded children. *Journal of Applied Behavior Analysis*, 1976, 9(1), 108.

Bornstein, M. R., Bellack, A. S., & Hersen, M. Social skills training for unassertive children: A multiple baseline analysis. *Journal of Applied Behavior Analysis*, 1977, *10*, 183–195.

Bornstein, P. H., & Quevillon, R. P. The effects of a self-instructional package with overactive preschool boys. *Journal of Applied Behavior Analysis*, 1976, *9*, 179–188.

Broden, M., Hall, R. V., Dunlap, A., & Clark, R. Effects of teacher attention and a token reinforcement system in a junior high special education class. *Exceptional Children*, 1970, *36*, 341–349.

Brown, D., Reschly, D., & Sabers, D. Using group contingencies with punishment and positive reinforcement to modify aggressive behaviors in a Head Start classroom. *The Psychological Record*, 1974, *24*, 491–496.

Bruininks, R. H., Rynders, J. E., & Gross, J. C. Social acceptance of mildly retarded pupils in resource rooms and regular classes. *American Journal of Mental Deficiency*, 1974, *78*, 377–383.

Bruininks, V. L. Actual and perceived peer status of learning-disabled students in mainstream programs. *Journal of Special Education*, 1978, *12*, 51–58.

Bryan, T. S. Peer popularity of learning disabled children. *Journal of Learning Disabilities*, 1974, *7*, 621–625.

Bryan, T. S. Peer popularity of learning disabled children: A replication. *Journal of Learning Disabilities*, 1976, *9*, 307–311.

Bryan, T. S. Social relationships and verbal interactions of learning disabled children. *Journal of Learning Disabilities*, 1978, *11*, 107–115.

Bryan, T. S., & Wheeler, R. Perception of children with learning disabilities: The eye of the observer. *Journal of Learning Disabilities*, 1972, *5*, 484–488.

Bryan, T. S., Wheeler, R., Felcan, J., & Henek, T. "Come on dummy": An observational study of children's communications. *Journal of Learning Disabilities*, 1976, *9*, 53–61.

Buell, J., Stoddard, P., Harris, F., & Baer, D. M. Collateral social development accompanying reinforcement of outdoor play in a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 167–173.

Burchard, J. D., & Barrera, F. An analysis of timeout and response cost in a programmed environment. *Journal of Applied Behavior Analysis*, 1972, *5*, 271–282.

Burchard, J. D., & Harig, P. T. Behavior modification and juvenille deliquency. In H. Leitenberg (Ed.), *Handbook of behavior modification and behavior therapy*. Englewood Cliffs, N.J.: Prentice Hall, 1976.

Camp, B. W., Blom, G. E., Herbert, F., & van Doorninck, W. J. "Think Aloud": A program for developed self-control in young aggressive boys. *Journal of Abnormal Child Psychology*, 1977, *5*, 157–169.

Cartledge, G., & Milburn, J. F. The case for teaching social skills in the classroom: A review. *Review of Educational Research*, 1978, *48*, 133–156.

Charlesworth, R., & Hartup, W. W. Positive social reinforcement in the nursery school peer group. *Child Development*, 1967, *38*, 993–1,002.

Clark, H. B. A program of delayed consequences for the management of class attendance and disruptive classroom behavior of 124 special education children. In G. Semb (Ed.), *Behavior analysis and education*. Lawrence, Kansas: University of Kansas, 1972.

Clark, H. B., Rowbury, T., Baer, A. M., & Baer, D. M. Timeout as a punishing stimulus in continuous and intermittent schedules. *Journal of Applied Behavior Analysis*, 1973, *6*, 443–455.

Cohen, S., Keyworth, J., Kliener, R., & Libert, J. The support of school behaviors by home-based reinforcement via parent-child contingency contracts. In E. Ramp & B. Hopkins (Eds.), *A new direction for education: Behavioral analysis*. Lawrence, Kansas: University of Kansas, 1971.

Coleman, R. G. A procedure for fading from experimenter—school-based to parent—home-based control of classroom behavior. *Journal of School Psychology*, 1973, *11*, 71–79.

Cooke, T. P., & Apolloni, T. Developing positive social-emotional behaviors: A study of training and generalization effects. *Journal of Applied Behavior Analysis*, 1976, *9*, 65–78.

Cooke, T. P., Apolloni, T., & Cooke, S. A. Normal preschool children as behavioral models for retarded peers. *Exceptional Children*, 1977, *43*, 531–532.

Cowen, E. L., Pederson, A., Babigan, H., Izzo, L. D., & Trost, M. A. Long-term follow-up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology*, 1973, *41*, 438–446.

Dietz, S. M., & Repp, A. C. Decreasing classroom misbehavior through the use of DRL schedules of reinforcement. *Journal of Applied Behavior Analysis*, 1973, *6*, 457–463.

Dietz, S. M., & Repp, A. C. Differentially reinforcing low rates of misbehavior with normal elementary school children. *Journal of Applied Behavior Analysis*, 1974, *7*, 622.

Drabman, R. S. Child-versus teacher-administered token programs in a psychiatric hospital school. *Journal of Abnormal Child Psychology*, 1973, *1*, 68–87.

Drabman, R. S., Spitalnik, R., & O'Leary, K. D. Teaching self-control to disruptive children. *Journal of Abnormal Psychology*, 1973, *82*, 10–16.

Epstein, M. H., Repp, A. C., & Cullinan, D. Decreasing "obscene" language of behaviorally disordered children through the use of a DRL schedule. *Psychology in the Schools*, 1978, *15*, 419–423.

Evers, W. L., & Schwarz, J. C. Modifying social withdrawal in preschoolers: The effects of filmed modeling and teacher praise. *Journal of Abnormal Child Psychology*, 1973, *1*, 248–256.

Evers-Pasquale, W. L. The Peer Preference Test as a measure of reward value: Item Analysis, Cross-Validation, Concurrent Validation, and Replication. *Journal of Abnormal Child Psychology*, 1978, *6*, 175–188.

Evers-Pasquale, W., & Sherman, M. The reward value of peers: A variable influencing the efficacy of filmed modeling in modifying social isolation in preschoolers. *Journal of Abnormal Child Psychology*, 1975, *3*, 179–189.

Fechter, J. V. Modeling and environmental generalization by mentally retarded subjects of televised aggressive or friendly behavior. *American Journal of Mental Deficiency*, 1971, *76*, 266–267.

Feitelson, D., Weintraub, S., & Michael, O. Social interactions in heterogeneous preschools in Israel. *Child Development*, 1972, *43*, 1,249–1,259.

Fixen, D. L., Wolf, M. M., & Phillips, E. L. Achievement Place: A teaching family model of community-based group homes for youth in trouble. In L. A. Hammerlynck, L. C. Handy, & E. J. Mash (Eds.), *Behavior change: Methodology, concepts, and practice* (4th Banff Conference). Champaign, Ill.: Research Press, 1973.

Forehand, R., & King, H. E. Noncompliant children: Effects of parent training on behavior and attitude change. *Behavior Modification*, 1977, *1*, 93–108.

Foster, S. L., & Ritchey, W. L. Issues in the assessment of social competence in children. *Journal of Applied Behavior Analysis*, 1979, *12*, 625–638.

Gamble, A., & Strain, P. S. The effects of dependent and interdependent group contingencies on socially appropriate responses in classes for emotionally handicapped children. *Psychology in the Schools*, 1979, *16*, 253–260.

Geller, M. I., & Scheirer, C. J. The effect of filmed modeling on cooperative play in disadvantaged preschoolers. *Journal of Abnormal Child Psychology*, 1978, *6*, 71–87.

Goodman, H., Gottlieb, J., & Harrison, R. H. Social acceptance of EMR's integrated into a nongraded elementary school. *American Journal of Mental Deficiency*, 1972, *76*, 412–417.

Gottlieb, J. Attitudes toward retarded children: Effects of labeling and behavioral aggressiveness. *Journal of Educational Psychology*, 1975, *67*, 581–585.

Gottlieb, J., & Budoff, M. Social acceptability of retarded children in nongraded schools differing in architecture. *American Journal of Mental Deficiency*, 1973, *78*, 15–19.

Gottlieb, J., Semmel, M. I., & Veldman, D. J. Correlates of social status among mainstreamed mentally retarded children. *Journal of Educational Psychology*, 1978, *70*, 396–405.

Gottman, J. M. Toward a definition of social isolation in children. *Child Development*, 1977, *48*, 513–517.(a)

Gottman, J. M. The effects of a modeling film on social isolation in preschool children: A methodological investigation. *Journal of Abnormal Child Psychology*, 1977, *5*, 69–78.(b)

Gottman, J., Gonso, J., & Rasmussen, B. Social interaction, social competence, and friendship in children. *Child Development*, 1975, *46*, 709–718.

Gottman, J., Gonso, J., & Schuler, P. Teaching social skills to isolated children. *Journal of Abnormal Child Psychology*, 1976, *4*, 179–197.

Greenwood, C. R., Walker, H. M., & Hops, H. Issues in social interaction/withdrawal assessment. *Exceptional Children*, 1977, *43*, 490–499.

Gresham, F. M. Assessment of children's social skills. *Journal of School Psychology*, in press.

Gresham, F. M. Comparison of response cost and timeout in a special education setting. *Journal of Special Education*, 1979, *13*, 199–208.

Gresham, F. M., & Gresham G. N. Interdependent, dependent, and independent group contingencies for controlling disruptive behavior. *Journal of Special Education*, in press.

Gresham, F. M., & Nagle, R. J. Social skills training with children: Responsiveness to modeling and coaching as a function of peer orientation. *Journal of Consulting and Clinical Psychology*, 1980, *18*, 718–729.

Harris, S. L., & Ersner-Hershfield, R. Behavioral suppression of seriously disruptive behavior in psychotic and retarded patients: A review. *Psychological Bulletin*, 1978, *85*, 1,352–1,375.

Hartup, W. W. Peer interaction in social organizations. In P. H. Mussen (Ed.), *Carmichael's manual of child psychology*. New York: Wiley, 1970.

Hartup, W. W., Glazer, J. A., & Charlesworth, R. Peer reinforcement and sociometric status. *Child Development*, 1967, *38*, 1,017–1,024.

Hersen, M., & Barlow, D. H. *Single case experimental designs: Strategies for studying behavior change*. New York: Pergammon Press, 1976.

Hobbs, S. A., Moguin, L. E., Tryoler, M., & Lahey, B. B. Cognitive behavior therapy with children: Has clinical utility been demonstrated? *Psychological Bulletin*, 1980, *87*, 147–165.

Iano, R. P., Ayers, D., Heller, H. B., McGettigan, J. F., & Walker, S. Sociometric status of retarded children in an integrative program. *Exceptional Children*, 1974, *40*, 267–271.

Iwata, B. A., & Bailey, J. S. Reward versus cost token systems: An analysis of the effects on students and teacher. *Journal of Applied Behavior Analysis*, 1974, *7*, 567–576.

Jakibchuk, Z., & Smeriglio, V. L. The influence of symbolic modeling on the social behavior of preschool children with low levels of social responsiveness. *Child Development*, 1976, *47*, 838–841.

Jennings, K. D. People versus object orientation, social behavior, and intellectual abilities in children. *Developmental Psychology*, 1975, *11*, 511–519.

Jones, F. H., & Miller, W. H. The effective use of negative attention for reducing group disruption in special elementary classrooms. *The Psychological Record*, 1974, *24*, 435–448.

Karnes, M. B., Teska, J. A., & Hodgins, A. S. The effects of four programs of classroom intervention on the intellectual and language development of 4-year-old disadvantaged children. *American Journal of Orthopsychiatry*, 1970, *40*, 58–76.

Kaufman, K. F., & O'Leary, K. D. Reward, cost, and self-evaluation procedures for disruptive adolescents in a psychiatric hospital school. *Journal of Applied Behavior Analysis*, 1972, *5*, 293–309.

Kazdin, A. E. *The token economy*. New York: Plenum Press, 1977.

Kazdin, A. E., & Bootzin, R. R. The token economy: An evaluative review. *Journal of Applied Behavior Analysis*, 1972, *5*, 343–372.

Keller, M. F., & Carlson, P. M. The use of symbolic modeling to promote social skills in preschool children with low levels of social responsiveness. *Child Development*, 1974, *45*, 912–919.

Kendall, P. C., & Hollon, S. D. (Eds.). *Cognitive behavioral interventions: Theory, research, and procedures*. New York: Academic Press, 1979.

Kent, R. N., & Foster, S. L. Direct observational procedures: Methodological issues in naturalistic settings. In A. Cimenero, K. Calhoun, & H. Adams (Eds.), *Handbook of behavioral assessment*. New York: John Wiley, 1977.

Kirby, F. D., & Toler, H. C. Modification of preschool isolate behavior: A case study. *Journal of Applied Behavior Analysis*, 1970, *3*, 309–314.

Kopfstein, D. Effects of accelerating and decelerating consequences on the social behavior of trainable retarded children. *Child Development*, 1972, *43*, 800–809.

Kratochwill, T. R., (Ed.). *Single subject research: Strategies for evaluating change*. New York: Academic Press, 1978.

LaGreca, A. M., & Santogrossi, D. A. Social skills training with elementary school students: A behavioral group approach. *Journal of Consulting and Clinical Psychology*, 1980, *48*, 220–227.

Libet, J. M., & Lewinsohn, P. M. Concept of social skills with special reference to the behavior of depressed persons. *Journal of Consulting and Clinical Psychology*, 1973, *40*, 304–312.

Litow, L., & Pumroy, D. K. A brief review of classroom group-oriented contingencies. *Journal of Applied Behavior Analysis*, 1975, *8*, 341–347.

Lovaas, O. I., & Newsom, C. D. Behavior modification with psychotic children. In H. Leitenberg (Ed.) *Handbook of behavior modification and behavior therapy*. Englewood Cliffs, N.J.: Prentice Hall, 1976.

Madsen, C. H., Becker, W. C., & Thomas, D. R. Rules, praise, and ignoring: Elements of elementary classroom control. *Journal of Applied Behavior Analysis*, 1968, *1*, 139–150.

Maloney, D. M. et al. Teaching conversation-related skills to predelinquent girls. *Journal of Applied Behavior Analysis*, 1976, *9*, 371.

Marburg, C. C., Houston, B. K., & Holmes, D. S. Influence of multiple models on the behavior of institutionalized retarded children: Increased generalization to other models and other behaviors. *Journal of Consulting and Clinical Psychology*, 1976, *44*, 514–519.

Margolies, P. J. Behavioral approaches to the treatment of early infantile autism: A review. *Psychological Bulletin*, 1977, *84*, 249–264.

Mayhew, G. L., Enyart, P., & Anderson, J. Social reinforcement and the naturally occurring social responses of severely and profoundly retarded adolescents. *American Journal of Mental Deficiency*, 1978, *83*, 164–170.

Meichenbaum, D. H. *Cognitive-behavior modification: An integrative approach.* New York: Plenum Press, 1977.

Meichenbaum, D. H., & Goodman, J. Training impulsive children to talk to themselves: A means of developing self-control. *Journal of Abnormal Psychology*, 1971, *77*, 115–126.

Minkin, N. et al. The social validation and training of conversation skills. *Journal of Applied Behavior Analysis*, 1976, *9*, 127–140.

Mithaug, D. E., & Wolfe, M. S. Employing task arrangements and verbal contingencies to promote verbalizations between retarded children. *Journal of Applied Behavior Analysis*, 1976, *9*, 301–314.

Moore, S. G. Correlates of peer acceptance in nursery school children. In W. W. Hartup & N. L. Smothergill (Eds.), *The young child.* Washington, D.C.: National Association for the Education of Young Children, 1967.

Morgan, S. R. A descriptive analysis of maladjusted behavior in socially rejected children. *Behavioral Disorders*, 1977, *3*, 23–30.

Morris, R. J., & Dolker, M. Developing cooperative play in socially withdrawn retarded children. *Mental Retardation*, 1974, *12*, 24–27.

Nash, R. T., Thorpe, H. W., & Andrews, M. M. A management program for elective mutism. *Psychology in the Schools*, 1979, *16*, 246–253.

Nelson, R. O., & Hayes, S. C. Some current dimensions of behavioral assessment. *Behavioral Assessment*, 1979, *1*, 1–16.

O'Connor, R. D. Modification of social withdrawal through symbolic modeling. *Journal of Applied Behavior Analysis*, 1969, *2*, 15–22.

O'Connor, R. D. Relative effects of modeling, shaping, and the combined procedures for modification of social withdrawal. *Journal of Abnormal Psychology*, 1972, *79*, 327–334.

Oden, S., & Asher, F. R. Coaching children in social skills for friendship making. *Child Development*, 1977, *48*, 495–506.

O'Leary, K. D., & Drabman, R. S. Token reinforcement programs in the classroom: A review. *Psychological Bulletin*, 1971, *75*, 379–398.

O'Leary, S. G., & Dubey, D. R. Applications of self-control procedures by children: A review, *Journal of Applied Behavior Analysis*, 1979, *12*, 449–465.

Page, D. P., & Edwards, R. P. Behavior change strategies for reducing disruptive classroom behavior. *Psychology in the Schools*, 1978, *15*, 413–418.

Pekarik, E. G. et al. The pupil evaluation inventory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology*, 1976, *4*, 83–97.

Peterson, C., Peterson, J., & Scriven, G. Peer imitation by nonhandicapped and handicapped preschoolers. *Exceptional Children*, 1977, *43*, 223–224.

Pinkston, E. M., Reese, N. M., LeBlanc, J. M., & Baer, D. M. Independent control of a preschool child's aggression and peer interaction by contingent teacher attention. *Journal of Applied Behavior Analysis*, 1973, *6*, 115–124.

Quilitch, H. R., & Risley, T. R. Effects of play materials on social play. *Journal of Applied Behavior Analysis*, 1973, *6*, 573–578.

Ray, J. S. *Behavior of developmentally delayed and non-delayed toddler-age children: An ethological study.* Unpublished doctoral dissertation, George Peabody College, 1974.

Robin, A., Schneider, M., & Dolnick, M. The turtle technique: An extended case study of self-control in the classroom. *Psychology in the Schools*, 1976, *13*, 449–453.

Rogers-Warren, A., & Baer, D. M. Correspondence between saying and doing: Teaching children to share and praise. *Journal of Applied Behavior Analysis*, 1976, *9*, 335–354.

Romanczyk, R. G. et al. Increasing isolate and social play in severely disturbed children: Intervention and post intervention effectiveness. *Journal of Autism and Childhood Schizophrenia*, 1975, *5*, 57–70.

Roistacher, R. C. A microeconomic model of sociometric choice. *Sociometry*, 1974, *37*, 219–238.

Rosenbaum, A., O'Leary, K. D., & Jacob, R. G. Behavioral intervention with hyperactive children: Group consequences as a supplement to individual contingencies. *Behavior Therapy*, 1975, *6*, 315–323.

Rosenbaum, M. S., & Drabman, R. S. Self-control training in the classroom: A review and critique. *Journal of Applied Behavior Analysis*, 1979, *12*, 467–485.

Ross, A. O. *Psychological disorders of children: A behavioral approach to theory, research, and therapy.* New York: McGraw-Hill, 1974.

Rucker, C. N., & Vincenzo, F. M. Maintaining social acceptance gains made by mentally retarded children. *Exceptional Children*, 1970, *36*, 679–680.

Russo, D. C., & Koegel, R. L. A method for integrating an autistic child into a normal public-school classroom. *Journal of Applied Behavior Analysis*, 1977, *10*, 579–590.

Sachs, D. A. The efficacy of time-out procedures in a variety of behavior problems. *Journal of Behaviour Therapy and Experimental Psychiatry*, 1973, *4*. 237–242.

Santogrossi, D. A., O'Leary, K. D., Romanczyk, R. G., & Kaufman, K. D. Self-evaluation by adolescents in a psychiatric hospital school token program. *Journal of Applied Behavior Analysis*, 1973, *6*, 277–287.

Sheare, J. B. Social acceptance of EMR adolescents in integrated programs. *American Journal of Mental Deficiency*, 1974, *78*, 678–682.

Shores, R. E., Hester, P., & Strain, P. S. Effects of amount and type of teacher-child interaction on child-child interaction during free play. *Psychology in the Schools*, 1976, *13*, 171–175.

Sidman, M. *Tactics of scientific research.* New York: Basic Books, 1960.

Singleton, L. C., & Asher, S. R. Peer preferences and social interaction among third-grade children in an integrated school district. *Journal of Educational Psychology*, 1977, *69*, 330–336.

Stephens, T. M. *Social skills in the classroom.* Columbus, Ohio: Cedars Press, 1978.

Stokes, T. F., & Baer, D. M. An implicit technology of generalization. *Journal of Applied Behavior Analysis*, 1977, *10*, 349–368.

Strain, P. S. Increasing social play of severely retarded preschoolers with socio-dramatic activities. *Mental Retardation*, 1975, *13*, 7–9.

Strain, P. S. An experimental analysis of peer social initiations on the behavior of withdrawn preschool children: Some training and generalization effects. *Journal of Abnormal Child Psychology*, 1977, *5*, 445–455.

Strain, P. S., Shores, R. E., & Kerr, M. M. An experimental analysis of "spillover" effects on the social interaction of behaviorally handicapped preschool children. *Journal of Applied Behavior Analysis*, 1976, *9*, 31–40.

Strain, P. S., & Shores, R. E. Social reciprocity: A review of research and educational implications. *Exceptional Children*, 1977, *43*, 526–530.

Strain, P. S., Shores, R. E., & Timm, M. A. Effects of peer social initiations on the behavior of withdrawn preschool children. *Journal of Applied Behavior Analysis*, 1977, *10*, 289–298.

Strain, P. S., & Timm, M. A. An experimental analysis of social interaction between a behaviorally disordered preschool child and her classroom peers. *Journal of Applied Behavior Analysis*, 1974, *7*, 583–590.

Strain, P. S., & Wiegerink, R. Effects of socio-dramatic activities on social interaction among behaviorally disordered preschool children. *Journal of Special Education*, 1976, *10*, 71–75.

Synder, L., Apolloni, T., & Cooke, T. P. Integrated settings at the early childhood level: The role of nonretarded peers. *Exceptional Children*, 1977, *43*, 262–266.

Talkington, L. W., & Altman, R. Effects of film-mediated aggressive and affectual models on behavior. *American Journal of Mental Deficiency*, 1973, *77*, 420–425.

Thelen, M. H., Fry, R. A., Fehrenback, P. A., & Frautschi, N. M. Therapeutic videotape and film modeling: A review. *Psychological Bulletin*, 1979, *86*, 701–720.

Turkewitz, H., O'Leary, K. D., & Ironsmith, M. Producing generalization of appropriate behavior through self-control. *Journal of Consulting and Clinical Psychology*, 1975, *43*, 577–583.

Van Hasselt, V. B., Hersen, M., Whitehill, M. B., & Bellack, A. S. Social skill assessment and training for children: An evaluative review. *Behaviour Research and Therapy*, 1979, *17*, 413–437.

Van Houten, R. Social validation: The evolution of standards of competency for target behaviors. *Journal of Applied Behavior Analysis*, 1979, *12*, 581–591.

Victor, J. B., & Halverson, C. F. Behavior problems in elementary school children: A follow-up study. *Journal of Abnormal Child Psychology, 1976, 4*, 17–29.

Walker, H. M. Empirical assessment of deviant behavior in children. In N. J. Long, W. C. Morse, & R. G. Newman (Eds.), *Conflict in the classroom* (2nd ed.). Belmont California: Wadsworth Publishing 1971.

Walker, H. M., & Hops, H. Increasing academic achievement by reinforcing direct academic performance and/or facilitative nonacademic responses. *Journal of Educational Psychology*, 1976, *68*, 218–225.

Warren, S. F., Rogers-Warren, A., & Baer, D. M. The role of offer rates in controlling sharing by young children. *Journal of Applied Behavior Analysis*, 1976, *9*, 491–497.

Weinrott, M. R., Corson, J. A., & Wilchesky, M. Teacher-mediated treatment of social withdrawal. *Behavior Therapy*, 1979, *10*, 281–294.

Weintraub, S., Prinz, R. J., & Neale, J. M. Peer evaluations of the competence of children vulnerable to psychopathology. *Journal of Abnormal Child Psychology*, 1978, *6*, 461–473.

Whitman, T. L., Mercurio, J. R., & Caponigri. V. Development of social responses in two severely retarded children. *Journal of Applied Behavior Analysis*, 1970, *3*, 133–139.

Wolf, M. M. Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 1978, *11*, 203–214.

Zahavi, S. L., & Asher, S. R. The effect of verbal instructions on preschool children's aggressive behavior. *Journal of School Psychology*, 1978, *16*, 146–153.

Zimmerman, E. H., & Zimmerman, J. The alteration of behavior in a special classroom situation. *Journal of the Experimental Analysis of Behavior*, 1962, *5*, 59–60.

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Misguided Mainstreaming: The Case for Social Skills Training with Handicapped Children

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Abstract: This paper asserts that mainstreaming is based in part upon three faulty assumptions: (a) placement of handicapped children in regular classrooms will result in increased social interaction between handicapped and nonhandicapped children; (b) placement of handicapped children in regular classrooms will result in increased social acceptance of handicapped children by their nonhandicapped peers; and (c) mainstreamed handicapped children will model the behavior of their nonhandicapped peers because of increased exposure to them. A large body of research is reviewed which refutes these three assumptions. An alternative approach is suggested whereby handicapped children would be taught the requisite social skills for effective social interaction and peer acceptance. Social skills curricula for use by both special and regular education teachers are suggested for accomplishing this end.

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■ Special educators have been mandated by Public Law 94-142, The Education for All Handicapped Children Act of 1975, to provide handicapped children with a free, appropriate public education in the *least restrictive environment*. In the words of the law:

> To the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities, are educated with children who are not handicapped . . . and special classes, separate schooling or other removal of handicapped children from the regular educational environment occurs only when the nature or severity of the handicap is such that education in regular classes . . . cannot be achieved satisfactorily. (Education for All Handicapped Children Act of 1975)

The least restrictive environment requirement of Public Law 94-142 has been interpreted by most as being equivalent to the concept of mainstreaming (MacMillan & Semmel, 1977). One definition of mainstreaming is that proffered by Kaufman, Gottlieb, Agard, and Kukic (1975):

> Mainstreaming refers to the temporal, instructional, and social integration of eligible exceptional pupils with normal peers. It is based on an ongoing individually determined educational needs assessment, requiring clarification of responsibility for coordinated planning and programming by regular and special education administrative, instructional, and support personnel. (pp. 40–41)

However laudable the concept of mainstreaming or least restrictive environment is, it is based in part upon three faulty assumptions.

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One faulty assumption made by proponents of mainstreaming is that physical placement of handicapped children in regular classrooms will result in an increase in social interaction between handicapped and nonhandicapped children (Christophos & Renz, 1969; Fisher & Rizzo, 1974; Peterson & Haralick, 1977). A second faulty assumption is that placement of handicapped children in regular classrooms will result in increased social acceptance of handicapped children by their nonhandicapped peers (Birch, 1974; Christophos & Renz, 1969; Fisher & Rizzo, 1974; Sheare, 1974). The third faulty assumption is that mainstreamed handicapped children will model or imitate the behavior of their nonhandicapped peers as a result of increased exposure (Bricker, 1978; Mercer & Algozzine, 1977; Peterson & Haralick, 1977).

Mainstreaming efforts, for the most part, have been misguided because handicapped children have been placed in regular classrooms without the requisite social skills crucial for peer acceptance. Moreover, once placed, provisions are not made in the regular classroom to train social skills (Cartledge & Milburn, 1978). Mainstreaming efforts are likely to result in increased social isolation and more restrictive social environments unless provisions are made to train handicapped children in the social skills necessary for effective social interaction and peer acceptance. The purpose of the present paper is to review evidence which addresses this issue. The importance of social skills training will be discussed along with a brief review of how social skills have been effectively taught to handicapped children. Research will be reviewed showing that (a) nonhandicapped children interact less or more negatively with handicapped children in mainstreamed environments; (b) handicapped children are poorly accepted by their nonhandicapped peers; and (c) handicapped children do not automatically model the behavior of their nonhandicapped peers.

SOCIAL INTERACTION

A number of studies have shown that nonhandicapped children interact very little with mainstreamed handicapped children (see Figure 1). In general, these studies show that social interaction patterns between nonhandicapped and handicapped children occur at extremely low rates and are generally negative in nature. Not only are quantitative rates lower, but Bryan, Wheeler, Felcan, and Henek (1976) have shown that learning disabled children emit more competitive statements and receive fewer consideration statements than their nonhandicapped peers. Similar findings have been reported for emotionally disturbed and mentally retarded children (see Figure 1).

The fact that nonhandicapped children interact less and in general negatively with handicapped children suggests that mainstreaming efforts will be unsuccessful in establishing the acceptance of handicapped children by their peers. A large body of literature indicates that certain social behaviors such as cooperation, positive peer interaction, sharing, greeting

Study	Population
Allen, Benning, & Drummond, 1972	Preschool handicapped
Ballard, Corman, Gottlieb, & Kaufman, 1977	Mentally retarded
Berry & Marshall, 1978	Preschool mentally retarded
Bryan, 1974	Learning disabled
Bryan, 1978a	Learning disabled
Bryan, 1978b	Learning disabled
Bryan & Bryan, 1978	Learning disabled
Feitelson, Weintraub, & Michael, 1972	Preschool handicapped
Gottlieb, 1975	Mentally retarded
Gottlieb, Semmel, & Veldman, 1978	Mentally retarded
Karnes, Teska, & Hodgins, 1970	Preschool handicapped
Ray, 1974	Preschool handicapped
Shores, Hester, & Strain, 1976	Behaviorally handicapped
Strain, 1977	Behaviorally handicapped
Strain, Shores, & Kerr, 1976	Behaviorally handicapped
Strain, Shores, & Timm, 1977	Behaviorally handicapped

FIGURE 1. Research showing that handicapped children interact less often or more negatively with peers than nonhandicapped children.

others, asking for and giving information, and making conversation are predictive of social acceptance (Asher & Hymel, 1981; Asher, Oden, & Gottman, 1977). Since handicapped children are deficient in these social skills, it is erroneous to assume that mainstreaming these children into regular classrooms will result in an automatic increase in these behaviors.

SOCIAL ACCEPTANCE

Many proponents of mainstreaming assume that integrated placement will alleviate the stigma associated with special classes and that handicapped children will be accepted by nonhandicapped peers as a result of increased contact and familiarity. A considerable amount of research that has investigated the social status of handicapped children simply does not support this belief. It has been shown time and again that handicapped children are poorly accepted by their nonhandicapped peers. This is true for mentally retarded, learning disabled, and emotionally disturbed children (see Figure 2).

There is some evidence to support the notion that nonintegrated handicapped children are better accepted by their peers than mainstreamed handicapped children (Goodman, Gottlieb, & Harrison, 1972; Gottlieb & Budoff, 1973; Iano, Ayers, Heller, McGettigan, & Walker, 1977). If mainstreamed handicapped children are actually more poorly accepted by their peers, then it follows that mainstreamed classrooms are more restrictive environments than nonintegrated classrooms. Also, if a significant aspect of the mainstreaming definition is the "social integration of eligible exceptional pupils with normal peers" (Kaufman et al., 1974), then according to the research evidence mainstreaming efforts have been misguided. For the most part, the social integration of handicapped children with nonhandicapped peers has not been successfully achieved.

Several studies have investigated the correlates of social status among handicapped children. MacMillan and Morrison (1980) found that best predictors of social status for self-contained educable mentally retarded (EMR) children were teacher ratings of cognition and misbehavior. In an earlier study, Gottlieb, Semmel, & Veldman (1978) found that the best predictors of social status among mainstreamed EMR children were peer ratings of cognition and teacher ratings of cognition. The results of these two studies would suggest that correlates of social status differ in self-contained and mainstreamed EMR children. Since mainstreamed EMR children are rated by nonhandicapped peers, it may be that these raters are more likely to notice and negatively rate EMR children's poor academic behavior. Perhaps poor academics are the most salient characteristic of mainstreamed EMR children for nonhandicapped children and teachers. It should be noted that the cognition rating scale used in these two studies included many behaviors which could be considered social skills such as concentration on task, keeping mind on school work, finishing work on time, and performing without constant supervision. These task-related

Study	*Population*
Ballard, Corman, Gottlieb, & Kaufman, 1977	Mentally retarded
Bruininks, Rynders, & Gross, 1974	Mentally retarded
Bruininks, 1978	Learning disabled
Bryan, 1974	Learning disabled
Bryan, 1976	Learning disabled
Bryan, 1978	Learning disabled
Bryan & Bryan, 1978	Learning disabled
Bryan & Wheeler, 1972	Learning disabled
Cowen, Pedersen, Babigian, Izzo, & Trost, 1973	Emotionally disturbed
Gottlieb, 1975	Mentally retarded
Gottlieb & Budoff, 1973	Mentally retarded
Gottlieb, Semmel, & Veldman, 1978	Mentally retarded
Iano, Ayers, Heller, McGettigan, & Walker, 1974	Mentally retarded
MacMillan & Morrison, 1980	Mentally retarded
Morgan, 1977	Emotionally disturbed
Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976	Emotionally disturbed
Weintraub, Prinz, & Neale, 1978	Emotionally disturbed

FIGURE 2. Research showing that handicapped children are poorly accepted by peers.

behaviors have been shown to be important social skills (Cartledge & Milburn, 1978; Stephens, 1978).

Learning disabled children exhibit certain behaviors which have been shown to be predictive of poor social acceptance. For example, Bryan and Bryan (1978) found that learning disabled children emit and receive statements indicating hostility and rejection more often than nonhandicapped children; for example, learning disabled children reportedly spoke in a nastier manner and were more likely to ignore interpersonal initiations. Bruininks (1978) found that learning disabled children were less accurate in assessing their own social status than nonhandicapped children. Overall, learning disabled children tend to overestimate their social status. This social imperception may lead to increased social rejection.

Behavioral correlates of social status in emotionally disturbed children have received increased attention. Weintraub, Prinz, & Neale (1978) found that aggressive and withdrawal behavior were more frequently noted on a peer assessment instrument in children with schizophrenic and depressed mothers. Several studies have shown that behaviorally handicapped children interact with their peers at low levels (see Figure 1). These studies emphasize not only the quantity of social interaction but the quality as well (i.e., positive or negative).

To summarize, mainstreaming does not necessarily result in increased social acceptance of handicapped children. In fact, there is strong evidence to suggest that integration of handicapped children into regular classrooms leads to increased peer rejection and isolation. Mainstreaming efforts based upon the faulty assumption that peer acceptance of handicapped children will materialize as a result of integration into regular classrooms should be reconsidered. Many times integrated placement of handicapped children results in poor peer acceptance setting handicapped children up for rejection, ridicule, and failure. This is not to say that we should stop mainstreaming. The point is that handicapped children should be provided with the social skills necessary for peer acceptance before being integrated. Once students are mainstreamed, social skills training can be continued in the regular classroom to promote peer acceptance.

MODELING EFFECTS

One rationale advanced by advocates of mainstreaming is that placement of handicapped children into regular classrooms will result in the handicapped child imitating or modeling the appropriate social and academic behavior of nonhandicapped peers. Modeling effects simply do not occur by exposure. Modeling theory (Bandura, 1969, 1977) and an expanding body of applied research suggest that this does not take place (see Figure 3). For modeling effects to occur, the observer must attend to relevant modeling stimuli, retain the information or stimuli which were modeled, have the motor-reproduction processes necessary to execute the modeled behavior, and have some incentive or motivation for performing the observed behavior (Bandura, 1977). Moreover, modeling effects are enhanced when modeling sequences are narrated, when coping rather than mastery models are used, and when attention is called to the model's behavior (Bandura, 1969, 1977).

It should be obvious that many handicapped children do not have the imitative skills to model certain behaviors in the classroom. Many handicapped children do not have the attending, memory, or reproductive skills to benefit from integrated placement into regular classrooms. Also, most regular classrooms are not structured to allow observational learning to occur. A multitude of variables can affect a child's

Study	Population
Apolloni & Cooke, 1978	Preschool handicapped
Apolloni, Cooke, & Cooke, 1977	Preschool handicapped
Cooke, Apolloni, & Cooke, 1977	Preschool handicapped
Marburg, Houston, & Holmes, 1976	Mentally retarded
Peterson, Peterson, & Scriven, 1977	Preschool handicapped
Snyder, Apolloni, & Cooke, 1977	Preschool mentally retarded
Strain, Shores, & Kerr, 1976	Behaviorally handicapped

FIGURE 3. Research showing that handicapped children do not model the behavior of peers unless specific programming efforts are made.

ability or willingness to reproduce a modeled behavior (Bandura, 1971). These include interest in imitating a response, past history of reinforcement for imitation, and complexity of modeled behaviors. Furthermore, imitation is more likely to occur under conditions of active participation than passive observation (Bricker, 1976; Guralnick, 1976). Most traditional classrooms are not structured so that handicapped children can actively participate in the imitation of the appropriate social behavior of their nonhandicapped peers.

Currently, there is little empirical evidence to suggest that integration of handicapped students into regular classrooms will result in beneficial modeling effects. As Apolloni and Cooke (1978) point out, the subject of beneficial outcomes of mainstreaming has not come under empirical scrutiny and has been influenced more by legal, ethical, and value judgments than by research evidence.

Based upon the foregoing review, the research evidence does not support the notion that mainstreaming will result in increased social interaction between handicapped and nonhandicapped children, that handicapped children will be socially accepted in mainstreamed classrooms, or that beneficial modeling effects will occur as a result of mainstreaming. The interpretation of these results leads one to the conclusion that, all things considered, mainstreaming alone does not result in beneficial outcomes for handicapped children. Mainstreaming, however, can result in beneficial outcomes if it is focused upon teaching handicapped children the social skills necessary for positive interaction and social acceptance. The following section will address the issues of social skills assessment and training.

CONCEPT OF SOCIAL SKILL

Recently, there has been an increased interest in social skills training with children (Asher & Hymel, 1981; Asher et al., 1977; Bornstein, Bellack, & Hersen, 1977; Gottman et al., 1975; Gottman, Gonso, & Schuler, 1976). Social skills may be viewed as part of a broader construct known as social competence. Foster and Ritchey (1979) define social competence as "... those responses, which within a given situation, prove effective, or in other words, maximize the probability of producing, maintaining, or enhancing positive effects for the interactor" (p. 626). This is not unlike the notion of social intelligence which refers to a person's ability to understand and deal effectively with social and interpersonal objects and events (Greenspan, 1979). Social competence or social intelligence is part of the better-known construct of adaptive behavior (Reschly, 1981).

The importance of adaptive behavior assessment in special education needs no further discussion here. However, there has been little emphasis in special education on assessing the social skill level of mainstreamed handicapped children and using the results of such an assessment for remediation of social skill deficits or to guide mainstreaming decisions. The purpose of this section is to briefly review the literature on social skills assessment and training of handicapped children.

Social Skills Assessment

There are few, if any, well-standardized instruments designed to assess the social skill level of handicapped children. In a recent review on the assessment of social withdrawal in children, Greenwood, Walker, and Hops (1977) identified naturalistic observation, sociometric measures, and teacher ratings as the most commonly used assessment methods. Each type of measure has its own advantages and disadvantages (Gresham, 1981). Suffice it to say that each measure yields important information concerning a handicapped child's level of social competence.

Teacher ratings and sociometric measures can be used for selection and outcome measures in social skill training programs, whereas naturalistic observations can be used to assess the antecedents and consequences surrounding social behavior. One should, however, be aware of the potential drawbacks of using sociometric methods with atypical populations (see Jones, 1976). Essentially, these drawbacks center around three issues: (a) vulnerability of sociometric ratings to events which precede administration of the scale, (b) the relationship between sociometric ratings and actual social interactions among class members, and (c) situation-specificity of sociometric ratings (i.e., reading group to playground). MacMillan and Semmel (1977) contend that sociometrics should be supported by other data such as behavioral observations and teacher ratings. Thus, all three measures should be used in assessing social competence in order to provide convergent data regarding social skill levels of handicapped children.

A welcome addition to the technology of social skills assessment has been the development of the Social Behavior Assessment (SBA) instrument by Stephens (1978). The SBA is a teacher rating scale in which 136 social skills grouped into four categories are rated on a 0 to 3 scale. The four categories are (a) behaviors related to the environment, (b) interpersonal behaviors, (c) self-related behaviors, and (d) task-related behaviors. The SBA is criterion-referenced and accompanied by a book (*Social Skills in the Classroom*) which specifies objectives and techniques for training all 136 social skills. The SBA should assist teachers in assessing the social competence of handicapped children and provide multidisciplinary teams with information to make decisions regarding a child's readiness for mainstreaming.

Several other social skill assessment techniques have been developed and are undergoing investigation. Since these assessment techniques are less often used, they will not be reviewed here. The interested reader should consult Asher and Hymel (1981) for a review of these techniques.

Social Skills Training

Social skills training techniques derived from the social learning theory literature (Bandura, 1969, 1977) can be categorized under three major headings: (a) manipulation of antecedents, (b) manipulation of consequences, and (c) modeling. Cognitive-behavioral techniques have also been used extensively with handicapped children but will not be reviewed here. The interested reader should consult three sources which have comprehensively reviewed this area (Hobbs, Moguin, Tryoler, & Lahey, 1980; O'Leary & Dubey, 1979; Rosenbaum & Drabman, 1979). Many investigators have used varying combinations of the above strategies to train social skills in handicapped children.

Manipulation of antecedents. Manipulating antecedent events in the handicapped child's social environment has been an effective social skills training technique. The rationale for antecedent manipulation is based on the notion that handicapped children have low rates of social interaction and/or are poorly accepted because the social environment does not set the occasion for positive social exchanges between handicapped children and their peers. Antecedent manipulation has the advantage of requiring less teacher time and active monitoring than consequent control techniques (e.g., edibles, tokens, shaping, etc.).

In a series of three studies, Strain and his associates (Strain, 1977; Strain, Shores, & Timm, 1977; Strain & Timm, 1974) increased the social interaction rates of handicapped children by having nonhandicapped peers initiate social interactions with them. The typical procedure in these studies involved peer confederates giving social initiations to handicapped children (e.g., "Let's play ball," "Come on," etc.). These initiations set the occasion for increased interaction between handicapped and nonhandicapped children.

In another group of studies, Strain and his fellow investigators (Shores, Hester, & Strain, 1976; Strain, 1975; Strain & Wiegerink, 1976) used sociodramatic activities to increase handicapped children's social interaction rates. In sociodramatics, children assume roles of characters in familiar children's stories (e.g., *Three Bears, Snow White, Little Red Riding Hood*), which sets the occasion for reciprocal social exchanges between the participants. Typically, the teacher reads a familiar story to a group of children and has the participants act out the various roles of the characters. This technique is not strictly antecedent in that the teacher prompts, models, and reinforces participation.

Several investigators have used the arrangement of game-playing activities or tasks to increase social interaction rates and to facilitate peer acceptance of handicapped children (Aloia, Beaver, & Pettus, 1978; Ballard, Corman, Gottlieb, & Kaufman, 1977; Rucker & Vincenzo, 1970). As in the initiation and sociodramatic research, cooperative games or tasks can set the occasion for social interaction and peer acceptance. For example, Aloia et al. (1978) found that presenting information to an EMR child's peers regarding his or her competency in a game increased the selection of these EMR children by their nonhandicapped peers on a subsequent task. Similar findings were reported by Rucker and Vincenzo (1970).

Manipulation of consequences. Consequence manipulation has been the most often used behavior-change strategy in special education classrooms. It has also been frequently used for social skills training with handicapped children. Consequence control training strategies have included *contingent social reinforcement* (Allen, Hart, Buell, Harris, & Wolf, 1964; Buell, Stoddard, Harris, & Baer, 1968; Nash, Thorpe,

& Andrews, 1979); *token reinforcement programs* (Broden, Hall, Dunlap, & Clark, 1970; Drabman, 1973); Iwata & Bailey, 1974; Russo & Koegel, 1977); *group contingencies* (Gamble & Strain, 1979; Gresham & Gresham, in press; Rosenbaum, O'Leary, & Jacob, 1975); and *differential reinforcement of low rates of responding* (DRL) (Dietz & Repp, 1973; Epstein, Repp, & Cullinan, 1978).

The general procedure in contingent social reinforcement involves having a teacher socially reinforce (praise, hug, etc.) the target child when interacting or cooperating with peers. This same procedure can be used to reinforce nonhandicapped children whenever they approach and interact positively with mainstreamed handicapped children. Token-based reinforcement procedures typically involve having the teacher administer points or tokens contingent upon appropriate social behavior (e.g., sharing, cooperation, positive interaction). Russo and Koegel (1977) used a token program to successfully mainstream a 5-year-old autistic girl into a classroom of approximately 25 nonhandicapped children. Social skills such as saying hello, borrowing a toy, and sharing materials were reinforced with tokens. Self-stimulatory behavior was punished via removal of tokens (response cost).

Group contingencies refer to the application of consequences for the group behavior management of children in the classroom. Thus, reinforcement for the group may depend upon the behavior of the entire group (interdependent group contingency) or upon one or two group members (dependent group contingency). Gamble and Strain (1979) used an interdependent group contingency to increase the frequency of certain social skills in a self-contained classroom for emotionally disturbed children. The social skills included cooperation, compliance with requests, sharing, saying please and thank you, and verbal complimenting. Reinforcement (package of Tic Tacs) for the entire class was made contingent upon each child in the class earning at least 20 "smiley faces" per week. This contingency led to increases in the above-mentioned social skills. Gresham and Gresham (in press) used a dependent group contingency whereby selected children earned reinforcement for the entire class for displaying appropriate social skills. Reinforcement for the group was made contingent upon the behavior of two target children. This procedure could be used in mainstreamed classrooms using handicapped children as earners of reinforcement for the group. Considerable caution should be exercised to ensure that target children can succeed in earning reinforcement for class members.

Differential reinforcement of low rates of responding (DRL) has been used to decrease inappropriate social behavior in handicapped children. DRL involves the reinforcement of a response any time it follows the previous response by some specified period of time. Dietz and Repp (1973) used a DRL schedule to reduce the inappropriate talking of an entire EMR classroom. Students could earn reinforcement (two pieces of candy) if the entire class made five or fewer talkouts in a 50-minute period. This reduced the frequency of talkouts from 32 to 3 per 50-minute time period. Epstein et al. (1978) used a DRL schedule to reduce and eliminate the frequency of obscene statements in a class of emotionally disturbed children. DRL schedules are successful in eliminating undesirable behavior without using punishment so that social skills training can be instituted using other techniques such as antecedent control, modeling, and/or cognitive-behavioral interventions.

Modeling. As previously stated, significant modeling effects do not occur simply by exposing handicapped children to their nonhandicapped peers in mainstreamed classrooms. Handicapped children typically have rather limited imitative repertoires (Nordquist, 1978); however, recent evidence suggests that imitation of peer models can be increased through systematic programming (Guralnick, 1976; Snyder, Apolloni, & Cooke, 1977).

Modeling can be presented in either live or film formats. Live modeling involves the target child observing models in naturalistic environments, whereas in film modeling, target children observe behavior via film or videotape. Bandura (1977) maintains that the cognitive processes which facilitate modeling are identical whether they be presented in live or film format.

Several studies have used modeling to teach social skills to handicapped children (Becker & Glidden, 1979; Cooke & Apolloni, 1976; Evers & Schwarz, 1973; Evers-Pasquale, 1978; Evers-Pasquale & Sherman, 1975; O'Connor, 1969, 1972; Peterson, Peterson, & Scriven, 1977; Strain, Shores, & Kerr, 1976). These studies have used either live or film modeling and have been con-

ducted with either socially withdrawn, mentally retarded, or behaviorally handicapped populations.

In a series of studies using film modeling (Evers & Schwarz, 1973; Evers-Pasquale, 1978; Evers-Pasquale & Sherman, 1975; O'Connor, 1969, 1972), investigators increased the social interaction rates of withdrawn preschoolers. A 23-minute color modeling film which depicted multiple models engaging in positive social interaction was shown to groups of withdrawn children. After the children viewed the film, social interaction rates of withdrawn preschoolers increased in the regular classroom. These studies suggest that relatively brief exposure to modeling films depicting children engaging in positive social interactions leads to increases in social interaction rates between withdrawn children and their peers in naturalistic settings.

Several aspects of the modeling films should be pointed out. The films were narrated to call attention to the models' behavior. The films used multiple models interacting in a variety of situations which has been shown to facilitate modeling effects and generalization (Bandura, 1977). Also, these films depicted models at first experiencing difficulty and fear of interacting with peers which they gradually overcame. This coping approach to problem situations has been shown to enhance modeling effects (Thelen, Fry, Fehrenback, & Frautschi, 1979). To be successful with handicapped children, modeling films must be carefully planned and sequenced in order to derive maximum modeling effects. Also, modeling films should be developed showing nonhandicapped children interacting positively with handicapped children. This may result in observers adopting positive attitudes toward handicapped children since observational learning has been shown to change values or attitudes (Bandura, 1977). That is, observers tend to adopt the attitudes or values depicted by models in modeling films.

Live modeling is perhaps the most workable technique for teachers in mainstreamed settings since expensive videotape equipment and modeling films do not have to be developed. Stephens (1978) presents a number of modeling strategies which can be used by classroom teachers. Three studies which have used live modeling to teach social skills will be reviewed here (Cooke & Apolloni, 1976; Peterson et al., 1977; Strain, Shores, & Kerr, 1976).

Cooke and Apolloni (1976) used a combination of live modeling, instructions, and praise to teach smiling, sharing, positive physical contacting, and positive verbal contacting to four learning disabled children. These social skills generalized across settings (to the regular classroom), across subjects (i.e., to untrained children), and across time (maintenance at 4-week follow-up). The most interesting aspect of this study was the modeling of the trained social skills by children who were not the focus of the intervention. This suggests that peers can be used as viable models in the regular classroom for handicapped children. Strain et al. (1976) showed similar results using a group of behaviorally handicapped children. Strain et al. (1977) explained their results in terms of "spillover effects" in which nontarget children imitated those behaviors (i.e., social skills) of children who were being directly reinforced by the teacher.

There is some evidence to suggest that nonhandicapped models are imitated more than handicapped models. Bandura (1977) asserts that models higher in social status are emulated more than lower social status models. Peterson et al. (1977) tested this assertion with a group of mentally retarded and nonhandicapped preschoolers. Using either a handicapped or nonhandicapped model, Peterson et al. (1977) found that both handicapped and nonhandicapped preschoolers were more likely to imitate a nonhandicapped model. This finding was not due to ability to model or sociometric popularity since these were controlled. This suggests that nonhandicapped children are more effective models than handicapped children. The reason for this is unclear and merits further investigation.

DISCUSSION

There is currently enough empirical evidence to suggest that social skills training with handicapped children may be a means of helping these children interact more positively and to become better-accepted by their nonhandicapped peers. Also, recent research in social learning theory suggests that handicapped children can imitate appropriate social behavior as long as modeling is carefully planned and sequenced. There are several social skills curricula available which can be used by both special and regular education teachers to facilitate the beneficial effects of mainstreaming (Gold-

stein, Sprafkin, Gershaw, & Klein, 1980; Milburn & Cartledge, 1976; Stephens, 1978). Skills taught in these curricula are known correlates of peer acceptance (Asher, Oden, & Gottman, 1977; Cartledge & Milburn, 1978; LaGreca & Mesibov, 1979).

CONCLUSION

The thesis of this paper is that the principle of mainstreaming is based, in part, upon three faulty assumptions: (a) that placement of handicapped children in regular classrooms will result in increased social interaction between handicapped and nonhandicapped children; (b) that placement of handicapped children in regular classrooms will result in increased social acceptance of handicapped children by their nonhandicapped peers; and (c) that mainstreamed handicapped children will model the behavior of their nonhandicapped peers because of exposure to them. The large body of research reviewed does not support these assumptions.

Perhaps mainstreaming efforts have been misguided because of the difference between the intent, interpretation, and implementation of the least restrictive environment requirement of Public Law 94-142. Clearly, the intent of the least restrictive environment requirement is to prevent wholesale exclusion of exceptional children from the mainstream of the regular school environment. Part of the difficulty may have come about when many state and local education authorities interpreted this requirement to mean that most, if not all, handicapped children should be mainstreamed. This is at variance with the intent of the law. The intent is to educate in the least restrictive environment, not to mainstream all handicapped children. As the research demonstrates, mainstreaming often results in handicapped children being placed in more restrictive environments. In implementing the least restrictive requirement, many special educators were disillusioned to find that the purported benefits of mainstreaming were not realized.

In reviewing the general definition of least restrictive environment, Johnson and Johnson (1978) note that the purpose was to provide handicapped children with access to their nonhandicapped peers. Extending their views on least restrictive environment, Johnson and Johnson (1978) stated: "It is when handicapped students are liked, accepted, and chosen as friends that mainstreaming becomes a positive influence on the lives of both handicapped and normal progress students" (p. 153). The literature reviewed in the present paper suggests that handicapped children, for the most part, are not well-liked, accepted, or chosen as friends. They interact at low levels and do not imitate the behavior of their nonhandicapped peers unless specific programming efforts are made.

The intentions of proponents of the mainstreaming movement certainly have the best interests of handicapped children at heart. However, it seems that we must reassess our current proclivities toward indiscriminate mainstreaming. Redirection of efforts toward social skills assessment and training before, during, and after integration into regular classrooms should allow both handicapped and nonhandicapped children to extract maximum positive benefits from mainstreaming efforts.

Mainstreaming or education in the least restrictive environment is a philosophically laudable notion which has caused many people associated with the needs of handicapped children to be unduly optimistic. Anticipated outcomes of mainstreaming have not been realized, according to the research on social interaction, peer acceptance, and modeling. This review demonstrates that mere physical placement of handicapped learners in regular classrooms does not necessarily result in positive consequences.

Social skills training is one way of increasing the probability that mainstreaming will be successful. Handicapped children can be taught effective social skills in both self-contained and mainstreamed settings. The extent of a handicapped child's level of social skills should guide placement committee decisions on whether or not mainstreamed placement for that child is indicated at that time. If the child's level of social skill does not suggest that he or she would function successfully in a mainstreamed setting, then he or she should be placed in a more structured setting until the required social skill level has been obtained. While not a panacea, social skills training is one way to increase the odds that handicapped children will interact with and be socially accepted by their nonhandicapped peers.

REFERENCES

Allen, K. E., Benning, P. M., & Drummond, T. W. Integration of normal and handicapped children in

a behavior modification preschool: A case study. In G. Semb (Ed.), *Behavior analysis and education*. Lawrence, KS: University of Kansas Press, 1972.

Allen, K. E., Hart, B. M., Buell, J. S., Harris, F. R., & Wolf, M. M. Effects of social reinforcement on isolate behavior of a nursery school child. *Child Development*, 1964, 35, 511–518.

Alois, G. F., Beaver, R. J., & Pettus, W. F. Increasing initial interactions among integrated EMR students and their nonretarded peers in a game-playing situation. *American Journal of Mental Deficiency*, 1978, 82, 573–579.

Apolloni, T. & Cooke, T. P. Integrated programming at the infant, toddler, and preschool levels. In M. J. Guralnick (Ed.), *Early intervention and the integration of handicapped and nonhandicapped children*. Baltimore: University Park Press, 1978.

Apolloni, T., Cooke, S. A., & Cooke, T. P. Establishing a normal peer as a behavioral model for developmentally delayed toddlers. *Perceptual and Motor Skills*, 1977, 44, 231–241.

Asher, S. R. & Hymel, S. Children's social competence in peer relations: Sociometric and behavioral assessment. In J. D. Wine and M. D. Smye (Eds.). New York: Guilford Press, 1981.

Asher, S. R., Oden, S. L., & Gottman, J. M. Children's friendships in school settings. In L. G. Katz (Ed.), *Current topics in early childhood education* (Vol. 1). Norwood, NJ: Albex, 1977.

Ballard, M., Corman, L., Gottlieb, J., & Kaufman, M. J. Improving the social status of mainstreamed retarded children. *Journal of Educational Psychology*, 1977, 69, 605–611.

Bandura, A. *Principles of behavior modification*. New York: Holt, Rinehart, & Winston, 1969.

Bandura, A. (Ed.), *Psychological modeling*. Chicago: Aldine-Atherton, 1971.

Bandura, A. *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall, 1977.

Becker, S. & Glidden, L. M. Imitation in EMR boys: Model competency and age. *American Journal of Mental Deficiency*, 1979, 83, 360–366.

Berry, P. & Marshall, B. Social interaction and communication patterns in mentally retarded children. *American Journal of Mental Deficiency*, 1978, 83, 44–51.

Birch, J. W. *Mainstreaming: Educable mentally retarded children in regular classes*. Reston, VA: Council for Exceptional Children, 1974.

Bornstein, M. R., Bellack, A. S., & Hersen, M. Social skills training for unassertive children: A multiple baseline analysis. *Journal of Applied Behavior Analysis*, 1977, 10, 183–195.

Bricker, D. D. A rationale for the integration of handicapped and nonhandicapped preschool children. In M. J. Guralnick (Ed.), *Early intervention and the integration of handicapped and nonhandicapped children*. Baltimore: University Park Press, 1978.

Broden, M., Hall, R. V., Dunlap, A., & Clark, R. Effects of teacher attention and a token reinforcement system in a junior high special education class. *Exceptional Children*, 1970, 36, 341–349.

Bruininks, V. L. Actual and perceived peer status of learning-disabled students in mainstream programs. *Journal of Special Education*, 1978, 12, 51–58.

Bruininks, R. H., Rynders, J. E., & Gross, J. C. Social acceptance of mildly retarded pupils in resource rooms and regular classes. *American Journal of Mental Deficiency*, 1974, 78, 377–383.

Bryan, T. S. Peer popularity of learning disabled children. *Journal of Learning Disabilities*, 1974, 7, 621–625.

Bryan, T. S. Peer popularity of learning disabled children: A replication. *Journal of Learning Disabilities*, 1976, 9, 307–311.

Bryan, T. S. An observational analysis of classroom behaviors of children with learning disabilities. *Journal of Learning Disabilities*, 1978, 7, 35–43. (a)

Bryan, T. S. Social relationships and verbal interactions of learning disabled children. *Journal of Learning Disabilities*, 1978, 11, 107–115. (b)

Bryan, T. S. & Bryan, J. H. Social interactions of learning disabled children. *Learning Disabilities Quarterly*, 1978, 1, 33–38.

Bryan, T. S. & Wheeler, R. Perception of children with learning disabilities: The eye of the observer. *Journal of Learning Disabilities*, 1972, 5, 484–488.

Bryan, T. S., Wheeler, R., Felcan, J., & Henek, T. "Come on dummy": An observational study of children's communication. *Journal of Learning Disabilities*, 1976, 9, 53–61.

Buell, J., Stoddard, P., Harris, F., & Baer, D. M. Collateral social development accompanying reinforcement of outdoor play in a preschool child. *Journal of Applied Behavior Analysis*, 1968, 1, 167–173.

Cartledge, G. & Milburn, J. F. The case for teaching social skills in the classroom: A review. *Review of Educational Research*, 1978, 48, 133–156.

Christophos, R. & Renz, P. A critical examination of special education programs. *Journal of Special Education*, 1969, 3, 371–380.

Cooke, T. P. & Apolloni, T. Developing positive social-emotional behaviors: A study of training and generalization effects. *Journal of Applied Behavior Analysis*, 1976, 9, 65–78.

Cooke, T. P., Apolloni, T., & Cooke, S. A. Normal preschool children as behavior models for retarded peers. *Exceptional Children*, 1977, 43, 531–532.

Cowen, E. L., Pederson, A., Babigian, H., Izzo, L. D., & Trost, M. A. Long-term follow-up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology*, 1973, 41, 438–446.

Dietz, S. M. & Repp, A. C. Decreasing classroom misbehavior through the use of DRL schedules of reinforcement. *Journal of Applied Behavior Analysis*, 1973, 6, 457–463.

Drabman, R. S. Child- versus teacher-administered token programs in a psychiatric hospital school.

Journal of Abnormal Child Psychology, 1973, 1, 86–87.

Epstein, M. H., Repp, A. C., & Cullinan, D. Decreasing "obscene" language of behaviorally disordered children through the use of a DRL schedule. *Psychology in the Schools*, 1978, 15, 419–423.

Evers-Pasquale, W. L. The Peer Preference Test as a measure of reward value: Item Analysis, Cross-Validation, Concurrent Validation, and Replication. *Journal of Abnormal Child Psychology*, 1978, 6, 175–188.

Evers-Pasquale, W. & Sherman, M. The reward value of peers: A variable influencing the efficacy of filmed modeling in modifying social isolation in preschoolers. *Journal of Abnormal Child Psychology*, 1975, 3, 179–189.

Evers, W. L. & Schwartz, J. C. Modifying social withdrawal in preschoolers: The effects of filmed modeling and teacher praise. *Journal of Abnormal Child Psychology*, 1973, 1, 248–256.

Feitelson, D., Weintraub, S., & Michael, O. Social interactions in heterogeneous preschools in Israel. *Child Development*, 1972, 43, 1249–1259.

Fisher, C. T. & Rizzo, A. A. A paradigm for humanizing special education. *Journal of Special Education*, 1974, 8, 321–329.

Foster, S. L. & Ritchey, W. L. Issues in the assessment of social competence in children. *Journal of Applied Behavior Analysis*, 1979, 12, 625–638.

Gamble, A. & Strain, P. S. The effects of dependent and interdependent group contingencies on socially appropriate responses in classes for emotionally handicapped children. *Psychology in the Schools*, 1979, 16, 253–260.

Goldstein, A. P., Sprafkin, R. P., Gershaw, N. J., & Klein, P. *Skillstreaming the adolescent: A structured learning approach to teaching prosocial skills*. Champaign, IL: Research Press, 1980.

Goodman, H., Gottlieb, J., & Harrison, R. H. Social acceptance of EMRs integrated into a nongraded elementary school. *American Journal of Mental Deficiency*, 1972, 76, 412–417.

Gottlieb, J. Attitudes toward retarded children: Effects of labeling and behavioral aggressiveness. *Journal of Educational Psychology*, 1975, 67, 581–585.

Gottlieb, J. & Budoff, M. Social acceptability of retarded children in nongraded schools differing in architecture. *American Journal in Mental Deficiency*, 1973, 78, 15–19.

Gottlieb, J., Semmel, M. I., & Veldman, D. J. Correlates of social status among mainstreamed mentally retarded children. *Journal of Educational Psychology*, 1978, 70, 396–405.

Gottman, J., Gonso, J., & Rasmussen, B. Social interaction, social competence, and friendship in children. *Child Development*, 1975, 46, 709–718.

Gottman, J., Gonso, J., & Schuler, P. Teaching social skills to isolated children. *Journal of Abnormal Child Psychology*, 1976, 4, 179–197.

Greenspan, S. Social intelligence in the retarded. In N. R. Ellis (Ed.), *Handbook of mental deficiency, psychological theory, and research* (2nd edition). Hillsdale, NJ: Lawrence Erlbaum Associates, 1979.

Greenwood, C. R., Walker, H. M., & Hops, H. Issues in social interaction/withdrawal assessment. *Exceptional Children*, 1977, 43, 490–499.

Gresham, F. M. Assessment of children's social skills. *Journal of School Psychology*, 1981, 19, 120–133.

Gresham, F. M. & Gresham, G. N. Interdependent, dependent, and independent group contingencies for controlling disruptive behavior. *Journal of Special Education*, in press.

Gurainick, M. J. The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry*, 1976, 46, 236–245.

Hobbs, S. A., Moguin, L. E., Tryoler, M., & Lahey, B. B. Cognitive behavior therapy with children: Has clinical utility been demonstrated? *Psychological Bulletin*, 1980, 87, 147–165.

Iano, R. P., Ayers, D., Heller, H. B., McGettigan, J. F., & Walker, V. S. Sociometric status of retarded children in an integrative program. *Exceptional Children*, 1974, 40, 267–271.

Iwata, B. A. & Bailey, J. S. Reward versus cost token systems: An analysis of the effects on student and teacher. *Journal of Applied Behavior Analysis*, 1974, 7, 567–576.

Johnson, D. W. & Johnson, R. T. Mainstreaming: Will handicapped children be liked, rejected, or ignored? *Instructor*, 1978, 87, 152–154.

Jones, R. L. Evaluating mainstreaming programs for minority children. In R. L. Jones (Ed.), *Mainstreaming and the minority child*. Minneapolis: Leadership Training Institute/Special Education, 1976.

Karnes, M. B., Teska, J. A., & Hodgins, A. S. The effects of four programs of classroom intervention on the intellectual and language development of 4-year-old disadvantaged children. *American Journal of Orthopsychiatry*, 1970, 40, 58–76.

Kaufman, M., Gottlieb, J., Agard, J. A., & Kukic, M. B. Mainstreaming: Toward an explication of the construct. In E. L. Meyer, G. A. Vergason, R. J. Whelan (Eds.), *Alternatives for teaching exceptional children*. Denver: Love Publishing, 1975.

LaGreca, A. M. & Mesibov, G. B. Social skills intervention with learning disabled children: Selecting skills and implementing training. *Journal of Clinical Child Psychology*, 1979, 1, 234–241.

MacMillan, D. L. & Morrison, G. M. Correlates of social status among mildly handicapped learners in self-contained special classes. *Journal of Educational Psychology*, 1980, 72, 437–444.

MacMillan, D. L. & Semmel, M. I. Evaluation of mainstreaming programs. *Focus on Exceptional Children*, 1977, 9, 1–14.

Marburg, C. C., Houston, B. K., & Holmes, D. S. In-

fluence of multiple models on the behavior of institutionalized retarded children: Increased generalization to other models and other behaviors. *Journal of Consulting and Clinical Psychology*, 1976, 44, 514–519.

Mercer, C. D. & Algozzine, B. Observational learning and the retarded: Teaching implications. *Education and Training of the Mentally Retarded*, 1977, 12, 345–353.

Milburn, J. F. & Cartledge, G. *Build your own social skills curriculum*. Unpublished manuscript, Cleveland State University, 1976.

Morgan, S. R. A descriptive analysis of maladjusted behavior in socially rejected children. *Behavioral Disorders*, 1977, 3, 23–30.

Nash, R. T., Thorpe, H. W., & Andrews, M. M. A management program for elective mutism. *Psychology in the Schools*, 1979, 16, 246–253.

Nordquist, V. M. A behavioral approach to the analysis of peer interaction. In M. J. Guralnick (Ed.), *Early intervention and the integration of handicapped and nonhandicapped children*. Baltimore: University Park Press, 1978.

O'Connor, R. D. Modification of social withdrawal through symbolic modeling. *Journal of Applied Behavior Analysis*, 1969, 2, 15–22.

O'Connor, R. D. Relative effects of modeling, shaping, and the combined procedures for modification of social withdrawal. *Journal of Abnormal Psychology*, 1972, 79, 327–334.

O'Leary, S. G. & Dubey, D. R. Applications of self-control procedures by children: A review. *Journal of Applied Behavior Analysis*, 1979, 12, 449–465.

Pekarik, E. G., Prinz, R. J., Liebert, D. E., Weintraub, S., & Neale, J. M. The pupil evaluation inventory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology*, 1976, 4, 83–97.

Peterson, N. L. & Haralick, J. G. Integration of handicapped and nonhandicapped preschoolers: An analysis of play behavior and social interaction. *Education on Training of the Mentally Retarded*, 1977, 12, 235–245.

Peterson, C., Peterson, J., & Scriven, G. Peer imitation by nonhandicapped and handicapped preschoolers. *Exceptional Children*, 1977, 43, 223–224.

Ray, J. S. *Behavior of developmentally delayed and non-delayed toddler-age children: An ethological study*. Unpublished doctoral dissertation, George Peabody College, 1974.

Reschly, D. J. Assessing mild mental retardation: The influence of adaptive behavior, sociocultural status, and prospects for nonbiased assessment. In C. Reynolds & T. Gutkin (Eds.), *The Handbook of School Psychology*. New York: Wiley Interscience, 1981.

Rosenbaum, M. S. & Drabman, R. S. Self-control training in the classroom: A review and critique. *Journal of Applied Behavior Analysis*, 1979, 12, 467–485.

Rosenbaum, A., O'Leary, K. D., & Jacob, R. G. Behavioral intervention with hyperactive children: Group consequences as a supplement to individual contingencies. *Behavior Therapy*, 1975, 6, 315–323.

Rucker, C. N. & Vincenzo, F. M. Mainstreaming social acceptance gains made by mentally retarded children. *Exceptional Children*, 1970, 36, 679–680.

Russo, D. C. & Koegel, R. L. A method for integrating an autistic child into a normal public-school classroom. *Journal of Applied Behavior Analysis*, 1977, 10, 579–590.

Sheare, J. B. Social acceptance of EMR adolescents in integrated programs. *American Journal of Mental Deficiency*, 1974, 78, 678–682.

Shores, R. E., Hester, P., & Strain, P. S. Effects of amount and type of teacher-child interaction on child-child interaction during free play. *Psychology in the Schools*, 1976, 13, 171–175.

Snyder, L., Apolloni, T., & Cooke, T. P. Integrated settings at the early childhood level: The role of nonretarded peers. *Exceptional Children*, 1977, 43, 262–266.

Stephens, T. M. *Social skills in the classroom*. Columbus, OH: Cedars Press, 1978.

Strain, P. S. Increasing social play of severely retarded preschoolers with socio-dramatic activities. *Mental Retardation*, 1975, 13, 7–9.

Strain, P. S. A experimental analysis of peer social initiations on the behavior of withdrawn preschool children: Some training and generalization effects. *Journal of Abnormal Child Psychology*, 1977, 5, 445–455.

Strain, P. S., Shores, R. E., & Kerr, M. M. An experimental analysis of "spillover" effects on the social interaction of behaviorally handicapped preschool children. *Journal of Applied Behavior Analysis*, 1976, 9, 31–40.

Strain, P. S., Shores, R. E., & Timm, M. A. Effects of peer social initiations on the behavior of withdrawn preschool children. *Journal of Applied Behavior Analysis*, 1977, 10, 289–298.

Strain, P. S. & Timm, M. A. An experimental analysis of social interaction between a behaviorally disordered preschool child and her classroom peers. *Journal of Applied Behavior Analysis*, 1974, 7, 583–590.

Strain, P. S. & Wiegerink, R. Effects of socio-dramatic activities on social interaction among behaviorally disordered preschool children. *Journal of Special Education*, 1976, 10, 71–75.

Thelen, M. H., Fry, R. A., Fehrenbach, P. A., & Frautschi, N. M. Therapeutic videotape and film modeling: A review. *Psychological Bulletin*, 1979, 86, 701–720.

Weintraub, S., Prinz, R. J., & Neale, J. M. Peer evaluations of the competence of children vulnerable to psychopathology. *Journal of Abnormal Child Psychology*, 1978, 6, 461–473.

Social Validity in the Assessment of Children's Social Skills: Establishing Standards for Social Competency

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Social Validity in the Assessment of Children's Social Skills: Establishing Standards for Social Competency

In a seminal article proposing a reconceptualization and reformulation of social skills, McFall (1982) made a distinction between social competence and social skill. According to McFall, social skills are the specific behaviors necessary to perform competently on social tasks. Social competence, on the other hand, is an evaluative term which reflects the quality of an individual's performance on a given social task. Thus, social competence can be defined in terms of social validity: the determination of the clinical, applied, and/or social importance of exhibiting certain social behaviors in particular situations (Kazdin, 1977; Van Houten, 1979; Wolf, 1978).

Social validity is a term that has enjoyed increased use in the behavior therapy literature. Wolf (1978) suggests that behavior change is socially validated on three levels. First, the social significance of the goals are evaluated. That is, are the goals of behavior change of a magnitude that society considers important? Second, are the means through which behavior change is effected socially appropriate in terms of cost effectiveness, time consumption, and ethicality? Third, are the outcomes of a given intervention considered to be socially important? In other words, does the quantity and quality of behavior change make a difference in terms of the individual's functioning in society?

One area of behavioral research in which the notion of social validity has intuitive appeal is social skills training (SST) with children. The ultimate goal of SST is to facilitate important and valued social outcomes for children. Unfortunately, much of the research concerning SST with children has focused upon teaching specific and somewhat narrowly defined skills in particular situations without considering the social validity of these skills (see Foster & Ritchey, 1979; Green & Forehand, 1980; Gresham, 1981a, 1981b; Van Hasselt, Hersen, Whitehill, & Bellack, 1979 for reviews).

McFall (1982) identifies several components of social competence that are relevant to social validity. One, social competence is evaluative in the sense that it represents someone's judgment of a particular performance. One method of socially validating behavior change is to ask significant others to judge whether or not behavior change is socially important (Kazdin, 1977; Van Houten, 1979; Wolf, 1978). This "consumer satisfaction" approach directly parallels McFall's (1982) first component of social competence.

Two, evaluations of competence are made with reference to certain criteria which may be either explicit or implicit. Certain social behaviors may be judged as competent by one criterion and evaluated as incompetent using another criterion. Van Houten (1979) suggests that behavior change can be socially validated by comparing target individuals' performance after treatment to the performance of individuals who are judged to be competent in the behaviors of interest. This normative

comparison represents an evaluation of competence on the basis of explicit criteria (i.e., the behavior of competent persons). Other performances may be judged as competent using implicit criteria such as global evaluations of the quality of performance by significant others (Wolf, 1978).

Finally, characteristics of the target individual can influence judgments of social competence. Some of these characteristics may be sex, age, degree of physical attractiveness, socioeconomic status, intellectual status, and ethnic/cultural background. Asher, Oden, and Gottman (1977) reviewed a large body of research and concluded that many of these aforementioned characteristics may influence judgments of social competence in children. As such, standards for social competence can be established for separate populations (e.g., males, blacks, preschoolers, mentally retarded, etc.) or a universal standard for competence can be established based upon the performance of highly competent individuals. The selection of separate or universal standards represents the traditional distinction between norm-referenced and criterion-referenced assessment, respectively (Cronbach, 1970).

Social validation and social competence closely parallel each other although the SST training literature has tended to ignore the importance of socially validating outcomes of training interventions. The purpose of the present paper is to provide a classification of outcome measures used in SST research with children based upon their social validity. Methods of establishing the social validity of SST programs

will be described and evaluated according to their utility within a behavioral assessment framework.

Social Skills Measures

A variety of dependent measures have been used to evaluate the outcomes of SST programs. Consequently, the use of different social skills measures by researchers has essentially rendered separate literatures concerning social skill deficits in children (Hops & Greenwood, 1981).

One literature primarily involves the use of sociometric data to evaluate the outcomes of SST (Asher & Hymel, 1981; Gottman, Gonso, & Rasmussen, 1975; Gottman, Gonso, & Schuler, 1976; Ladd, 1981; Ladd & Oden, 1979; Oden & Asher, 1977). Training techniques in this literature stress the importance of the child's verbal understanding of appropriate social behavior and typically use combinations of verbal instruction, coaching, and role playing. Another literature derives mainly from applied behavior analysis and characteristically employs rates of social interaction as primary outcome measures (Cooke & Apolloni, 1976; Evers & Schwarz, 1973; Evers-Pasquale, 1978; Jakichub & Smerglio, 1976; O'Connor, 1969, 1972; Strain, 1977; Strain, Shores, & Kerr, 1976; Weinrott, Corson, & Wilchesky, 1979). A final literature is rooted in the area of social cognition/developmental psychology and uses social problem solving tasks, impersonal problem solving tasks, and other measures of social cognition as outcome measures (Kendall & Braswell, 1982; Spivack, Platt, & Shure, 1976; Urbain & Kendall, 1980).

Relatively few studies have utilized multiple dependent measures to evaluate the outcomes of SST (Gresham & Nagle, 1980; La Greca & Santogrossi, 1980). Moreover, few studies have either investigated or interpreted results in light of the social validity of the changes brought about by training programs. Clearly, a methodological system is needed that is couched within an empirical framework that would allow us to determine which social skills are functionally related to social competence (Hops & Greenwood, 1981).

One approach to establishing the social validity of certain social skills would be to adopt a competence-correlates definition (Asher & Markell, Note 1; Gresham, 1981b, 1982a). A competence-correlates conceptualization defines behaviors as socially skilled if these behaviors predict important social outcomes for individuals. These so-called important social outcomes may be acceptance in the peer group, teacher or parent judgments of social competence, success in school, and/or other social behaviors known to correlate with any of the above social outcomes. The competence-correlates approach is a view of social skills that is based upon the idea of social validity. That is, if certain behaviors predict certain social outcomes that society considers important, then these behaviors must be, by definition, socially valid. Berler, Gross, and Drabman (1982) suggest that target behaviors that have an empirically demonstrated relationship with a criterion measure of social competence (e.g., sociometrics) may be the most valid and relevant skills to be taught in

social skills training.

In the following sections, an approach to the classification of social skills measures will be presented. This classification is based upon the social validity of the measures and are labeled as Type I, Type II, and Type III measures (Lahey & Strauss, 1982). Each of these measures will be discussed in light of their utility as socially valid dependent variables in SST with children and their relationships with one another across the classification typology.

Type I Measures

Type I measures are direct measures of a socially valued treatment goal (Lahey & Strauss, 1982). Type I measures are defined as such because significant others (parents, teachers, etc.) and social systems (schools, mental health agencies, courts, etc.) are inclined to refer children for treatment if they are deficient on Type I measures.

In the area of social skills, Type I measures might include sociometrics, teacher or parent ratings, certain forms of archival data (e.g., school attentance and suspension records, recidivism rates, probation violations, institutionalization records, etc.). Since sociometrics and teacher ratings have been the most frequently used in SST outcome studies, these will be discussed in some detail.

The most frequently used Type I measure in SST is peer sociometrics. Sociometrics have excellent psychometric properties such as stability, internal consistency, as well as construct and criterion--related validity (Asher & Hymel, 1981;

Asher et al., 1977; Gresham, 1981a, 1981b; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976). Studies using these measures have demonstrated significant improvements in sociometric status after training.

Sociometric status has obvious social validity for at least two reasons. One, sociometric status is a good predictor of other important social outcomes such as juvenile delinquency (Roff, Sells, & Golden, 1972), school maladjustment (Gronlund & Anderson, 1963), psychological adjustment in adulthood (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Garmezy, 1974; Kohn, 1977), dropping out of school (Ullman, 1957), and vulnerability to psychopathology in childhood (Weintraub, Prinz, & Neale, 1978). Two, being popular with and/or accepted by one's peers is a highly desirable and valued outcome in our society (Asher et al., 1977; Oden, 1980). Additionally, teachers' judgments of a child's popularity tend to agree highly with sociometric status (Green, Forehand, Beck, & Vosk, 1980; Green, Vosk, Forehand, & Beck, 1981; La Greca, 1981; MacMillan, Morrison, & Silverstein, 1980; Vosk, Forehand, Parker, & Rickard, in press). Teachers prefer to interact with popular children and dispense more attention and praise statements toward popular than unpopular children (Brophy, 1981).

Although studies show statistically significant improvements in sociometric status of children undergoing SST relative to controls, this author could find no published studies in which the sociometric status of poorly accepted and/or rejected children were compared to a group of unselected and

untreated children who were average in sociometric position (i.e., a normative sample). To demonstrate social validity, treated children should approach the sociometric position of "normal" children in order for the intervention to have social validity. Kazdin and Mascitelli (1982) used such a validation sample to establish the social validity of a treatment program for unassertiveness in an adult population using self-report, self-ratings, and a behavioral role play test as outcome measures. It remains to be demonstrated that SST can move poorly accepted or rejected children into the range of sociometric position occupied by children average in popularity and peer acceptance. Without such a baseline for comparison, we may be effecting statistically significant but socially insignificant changes in social competence for children.

Teacher judgments or ratings of children's social behavior after SST can be considered Type I and thus socially valid measures. Wolf (1978) states that the "consumer satisfaction" method is one approach to socially validating behavior change since significant others are in a unique position to judge whether or not behavior change is socially important. Teacher ratings or nominations have been used extensively in selecting children for SST and to investigate the correlates of sociometric status (Bolstad & Johnson, 1972; Greenwood, Walker, Todd, & Hops, Note 2; Greenwood, Walker, & Hops, 1977; Gresham, 1981a; O'Connor, 1969, 1972; Stephens, 1978; Strain, Cooke, & Apolloni, 1976; Weintraub, Neale, & Liebert, 1975).

Unfortunately, teacher judgments or ratings have not

been used extensively as a means of socially validating the outcomes of SST. Camp, Blom, Herbert, & van Doorninck (1977) used teacher ratings to evaluate the effects of a self-instructional training program designed to decrease aggressive behavior. The teacher ratings, however, were used as the primary outcome measure and not as a social validation measure. In an unpublished study, Winslow (1981) used teacher ratings of social skills before and after training in an attempt to socially validate the effects of SST with preschoolers. Winslow's results showed an increase in teacher ratings of social skills which paralleled increases in observed rates of social skills in a classroom setting. Fewer such increases in teacher ratings were noted for control children, thus offering evidence for the social validity of the training program.

Recent research has investigated the convergent-discriminant validity of teacher and peer rating methods of assessment. MacMillan et al. (1981) used a scale (Guess Who Scale) containing 31 behaviors for which teachers and peers nominated children in the classroom (e.g., who is always bothering others, who makes fun of others, who is smartest in class, etc.). A factor analysis yielded three independent factors: disruptive, bright, and dull which were identical to previous factor analytical work with the instrument (Gottlieb, Semmel, & Veldman, 1978). Using a multitrait-multimethod matrix (Campbell & Fiske, 1959), MacMillan et al. found that teacher and peer <u>methods</u> of assessing the three "traits" agreed with

one another (disruptive = .65, bright = .50, dull = .44). These findings suggest that teacher and peer ratings on certain classroom social behaviors have the same construct validity and either might be used for social validation purposes. Similar findings were reported by La Greca (1981) using teacher and peer ratings of withdrawn and aggressive behaviors.

Teacher ratings are often used for selection purposes or as primary outcome measures, but not for social validation in the SST literature. Since teacher ratings can be considered socially valid measures when used in conjunction with observed changes in behavior (Wolf, 1978), teacher judgments or ratings should be used to validate the social importance of behavior change. Additional, discussion of ways to collect and interpret these judgments or ratings will be presented in a subsequent portion of this paper.

Type II Measures

Type II measures are defined by Lahey and Strauss (1982) as those measures having straightforward construct validity and demonstrated empirical relationships with Type I measures (competence-correlates approach). Type II measures are not necessarily socially valid in and of themselves, but are important outcome measures because they can predict important social outcomes for children (i.e., standing on Type I measures).

Type II measures include direct observations of behavior in naturalistic settings, analogue/role play tests, self-report

inventories, behavioral interview data, and structured peer assessments.[1] Type II measures are the most frequently used dependent variables in SST studies with children, but usually are not socially validated by Type I measures.

Several studies, however, in the published literature have demonstrated significant relationships between Type II and Type I measures. The bulk of the research in this area has used naturalistic observations and behavioral role play tests to predict children's standing on Type I measures. As such, only the literature relevant to these types of measures will be reviewed in the following sections.

Naturalistic observations. A number of studies have investigated the relationship between observed rates of behavior in naturalistic settings and sociometric status (Bonney & Powell, 1953; Gresham, 1981c, 1982b; Gresham & Nagle, 1980; Hartup, Glazer, & Charlesworth, 1967; Marshall & McCandless, 1957; McCandless & Marshall, 1957; McGuire, 1973; Moore & Updegraff, 1964; Putallaz & Gottman, 1981; Singleton & Asher, 1977). Generally speaking, significant relationships between observed behavior and sociometric status are obtained more consistently with preschool than with elementary school children (Asher & Hymel, 1981).

One exception to this general trend can be found in a study by Gresham (1981c). Using a sample of third- and fourth-graders, Gresham found moderate correlations between behavior in a naturalistic setting (classroom) and sociometric status. An interesting aspect of Gresham's data was that while there

were moderate correlations between behavioral and sociometric measures, each type of sociometric measure (i.e., peer ratings and peer nominations) appeared to be tapping a separate dimension of social competence as revealed through a factor analysis.

In a related study, Gresham (1982b) found that various behaviors in a naturalistic setting differentially predicted separate aspects of sociometric status. Behaviors involving the reception of social interaction from peers (positive and negative) best predicted peer acceptance as measured by peer rating scales. Initiation of social interaction (positive and negative) best predicted children's friendship choices as measured by peer nomination scales. It appears from Gresham's (1981c, 1982b) data that certain categories of social interaction in naturalistic settings (Type II measures) differentially predict separate dimensions of sociometric status (Type I measures).

This finding has some bearing upon the establishment of social validity using different types of sociometric measures. Peer nominations appear to be measuring who a child's best friends are and typically are not sensitive to change in SST interventions (Gresham & Nagle, 1980; Oden & Asher, 1977). Peer ratings seem to be measuring overall acceptance in the peer group and are sensitive to SST interventions (Gresham & Nagle, 1980; Ladd, 1981; Oden & Asher, 1977). In terms of social validity, researchers may erroneously conclude that SST was not socially valid if they fail to effect changes on peer nomination measures. Since peer nominations appear to be

tapping children's best friendships, it may be unreasonable to expect significant changes in children's best friend choices as a result of SST. Using peer ratings as social validation measures, however, it does seem reasonable to expect significant changes in a child's overall level of acceptance in the peer group as a result of skills training. To date, their is little longitudinal research that has investigated the social impact of having few close friendships versus being poorly accepted in the peer group (Asher & Hymel, 1981; Asher et al., 1977; Strain & Kerr, 1981).

Role play/analogue measures). Behavioral role play tests or analogue measures have, in many ways, become the hallmark of assessment in social skills research (Bellack, 1979). Performance on role play measures of social skill typically show low correlations with social skills exhibited in naturalistic settings. Using an adult sample, Bellack, Hersen, and Lamparski (1979) found little relationship between behavior on a role-play measure and observations of the same social skills in naturalistic interactions. Using an elementary-age population, La Greca and Santogrossi (1980) found significant differences between a group of children who underwent SST compared to controls on a role-play measure. No significant differences, however, were found between the SST and control groups on rates of positive social behavior in naturalistic settings (e.g., gym, recess, club meetings, etc.) at posttest. Similar findings have been reported by other investigators for both child and adult populations (Bellack, et al., 1979);

Bellack, Hersen, Bellack, & Foley, 1979; Van Hasselt, Hersen, & Bellack, 1981).

It could be that performance on role play measures is tapping on individual's knowledge of how to behave in a socially skilled manner rather than an individual's typical performance in naturalistic settings having somewhat different demands, expectations, discriminative stimuli, and reinforcement contingencies. As such, it could be argued that a demonstrated improvement on a behavioral role play measure subsequent to SST offers evidence for the remediation of a skill deficit which usually does not predict performance in naturalistic settings (a performance deficit).

This lack of correspondence between behavior in role play situations and behavior in naturalistic settings has obvious ramifications for social validity. For example, there is little evidence to suggest that role play measures predict children's standing on Type I measures (e.g., sociometrics, teacher ratings, etc.). In one of the most comprehensive studies to date concerning the validity of role play tests for children, Van Hasselt et al. (1981) found low and nonsignificant relationships between role play measures and sociometrics (positive and negative nominations, peer ratings) and teacher ratings of social skill. Similar findings were reported by Berler et al. (1982) using a 20-item behavior role play test as a predictor and naturalistic social interactions and peer sociometrics as criteria. These studies should prompt serious questions regarding the social validity of behavioral role

play tests as validated by Type I measures.

Behavioral role play tests have been socially validated using subjective judgments of significant others after SST. Bornstein, Bellack, and Hersen (1977) showed improvements on a role play measure subsequest to SST that was socially validated by judges ratings on 5-point Likert scales. Using a sample of predelinquent adolescent females, Minkin, Braukmann, Minkin, Timbers, Timbers, Fixen, Phillips, and Wolf (1976) socially validated on SST program designed to improve conversational skills. Thirteen adult judges from the community rated the quality of each conversant from poor to excellent on a 7-point Likert scale after viewing videotapes of conversations. Similar social validation procedures have been used in the social skills literature (see Kazdin, 1977; Van Houten, 1979; Wolf, 1978 for reviews).

There is an obvious problem with using subjective judgments of behavior on role play tests for social validation purposes. Since role play tests assess behavior in contrived situations, judges' ratings of improved performance on role play measures do not necessarily predict important social outcomes for children. As previously mentioned, the relationship between role play measures and naturalistic observations as well as Type I measures is low. Therefore, ratings of improved performance in role play situations tell us little about how children might behave in naturalistic settings or how well children might be accepted by peers after SST. Role

play measures may be socially valid in the sense that judges perceive improvements in performance under somewhat artificial circumstances (i.e., the role play situation). Judges might also rate target children as being similar to nontarget ("normal" or very socially skilled) children on role play measures after training (Minkin et al., 1976). The fact remains that this in and of itself is not sufficient to establish the social validity of role play measures in the sense of predicting important social outcomes for children.

Type III Measures

Type III measures represent the least socially valid measures in evaluating the outcomes of SST with children. The construct validity of these measures may be theoretically related to the goals of SST, but there are extremely low, often nonsignificant, and/or zero-order correlations between Type III and Type I or Type II measures of social skill. Given these weak relationships, Type III measures are relatively useless in socially validating the effects of SST and are questionable as outcome measures in skills training with children.

Although Type III measures are of dubious value, they have been used frequently in SST research. Examples of Type III measures include the Matching Familiar Figures Test (MFFT), Porteus Mazes, Interpersonal Cognitive Problem Solving measures (ICPC) (Spivack, Platt, & Shure, 1976), Means-Ends Problem Solving task (MEPS) (Spivack & Shure, 1974), Purdue

Elementary Problem Solving Inventory (PEPSI) (Feldhusen & Houtz, 1975, and various other measures of social cognition (Borke, 1973; Chandler, 1973; Selman, 1980). In a comprehensive review of social-cognitive interventions and assessment methods, Urbain & Kendall (1980) conclude that various measures of social cognition (Type III measures) have not been validated by measures of overt behavioral adjustment such as behavioral observations (Type II measures) or, more importantly, teacher and parent ratings or peer sociometrics (Type I measures). In short, there is little if any evidence that performance on social cognition tasks predict important social outcomes for children.

One particular Type III measure that emanates from the cognitive behavior therapy literature and which has received recent research attention is the Self Control Rating Scale (SCRS) (Kendall & Wilcox, 1977; Kendall, Zupan, & Braswell, 1981). The SCRS is a teacher rating scale that supposedly taps both cognitive (deliberation, problem solving, planning, and evaluation) and behavioral (self-monitoring, self-evaluation, and self-reinforcement) components of self-control.

The SCRS has shown mainly non-significant correlations with other Type III measures (e.g., MFFT, Porteus Mazes, delay of gratification task, etc.) and low correlations with naturalistic observations of behavior in classroom settings (Kendall & Wilcox, 1979; Kendall et al., 1981). For example, the SCRS correlated .24 with a behavioral observation total

score which was a composite of off-task verbal, off-task physical, off-task attention, out of seat, and interruptions behaviors (Kendall & Wilcox, 1979). To date, the SCRS has not been validated against Type I measures such as peer sociometrics, teacher ratings of specific social skills, and so forth.

Type III measures, which usually attempt to tap aspects of social cognition, have not been shown to be socially valid in that they do not predict important social outcomes for children. Until and unless Type III measures are demonstrated to possess such social validity, their use as dependent variables in SST studies is questionable.

Conclusions and Future Directions

The foregoing review has attempted to provide a classification of social skills measures based upon their utility as socially valid indices of children's social competence. Social validity was discussed primarily in terms of Wolf's (1978) third level of social validation: the social importance of the effects of SST. Although social validity can be conceptualized as also evaluating the social significance of treatment goals and determining the acceptability of intervention strategies, this paper chose to define and discuss social validity in terms of predicting important social outcomes for several reasons.

First, parents, teachers, schools, courts, and other social system agents are primarily concerned with children's

performance or standing on Type I measures of social competence. As previously discussed, these measures include sociometric status, teacher/parent judgments of social competence, and so forth. Children are usually not referred for SST because of their performances on Type II measures of social skills such as low frequencies of eye contact in conversations, failure to say please and thank you, low rates of positive social reinforcement toward peers, and/or failure to make relevant remarks in conversations with peers. These Type II measures are typically selected on the basis of face validity and usually after teachers or parents have referred the child for assistance on the basis of some Type I measure (e.g., sociometrics, ratings, interview data, etc.).

Most social skills research targets Type II measures, such as the ones previously mentioned, as treatment goals and evaluates the success of SST on the basis of changes in these target behaviors. One could socially validate these changes using norm-based comparisons by demonstrating that the frequencies of Type II behaviors are similar to the frequencies emitted by nonreferred or socially skilled children (Kazdin, 1977; Van Houten, 1979). Unfortunately, unless we can demonstrate that normative rates of certain social skills predict important social outcomes (i.e., Type I measures), then the treatment is not socially valid in terms of the social importance criterion. An excellent example of this is Gottman's (1977) finding which showed that global rates of social interaction did not predict children's standing on

sociometric measures. Thus, when social interaction rates were increased to normative levels, they did not impact upon an extremely important social outcome (social acceptance).

A second and related issue deals with the application of the norm-based approach to Type I as opposed to Type II measures. A number of studies have demonstrated social validity by using norm-based comparisons for Type II measures such as naturalistically observed social skills and role play measures (see Foster & Ritchey, 1979; Gresham, 1981b; Van Hasselt et al., 1979 for reviews). This author could find no social skills studies which have employed norm-based comparisons to evaluate the effects of SST on Type I measures. That is, what is a child's level of peer acceptance after training compared to children who are average and/or above average in peer acceptance? For an extremely disruptive or aggressive child who undergoes SST, what is his/her frequency of school suspensions compared to the base rate of school suspensions for his/her peer group? As far as social systems are concerned, the ultimate effectiveness of a SST intervention will be judged by members of that social system on the basis of Type I and not Type II measures.

Establishing appropriate "norms" for Type I measures has its own array of difficulties and ambiguities (Kazdin, 1977). One must be careful in deciding what is meant by normal or what is the most appropriate norm group for a particular child. Van Houten (1979) recommends that a single goal based upon the performances of competent individuals be

used as the standard for social validity. There are a number of potential problems with using a universal goal for social competence. Standards for social competence may vary as a function of age, setting, sex, race, cultural background, and socioeconomic status. For example, elementary-age children tend to show considerable sex bias in their sociometric choices (Asher & Hymel, 1981). Creating a universal standard of social competence based upon cross-sex measures of peer acceptance in elementary-age children would yield an invalid estimate of social acceptance. Proper social validation of a SST program in this case would require comparisons of males to the average acceptance of males by males and comparisons of females to the average acceptance of females by females (i.e., separate norms by sex).

Another example of how standards of social competence may vary can be found in the literature concerning the social acceptance of mildly retarded children by nonretarded peers. A relatively large body of research suggests that mildly retarded children and adolescents are better accepted by nonretarded peers if they remain in self-contained classrooms rather than being integrated into regular education classrooms (Gottlieb, Semmel, & Veldman, 1978; MacMillan & Morrison, 1980; Morrison, 1981; Stager & Young, 1981). Thus, the social validation of a SST program with mildly retarded children using sociometrics as outcome measures will depend upon whether the children are being educated in self-contained (special) or regular education classrooms. What is the

appropriate norm to use? Do we want to move mildly retarded children to the average level of acceptance of mildly retarded children in special classes, in regular classes, or the average acceptance levels of nonretarded children? At this point, the social validity of such a program is probably best decided by the subjective judgment of the person primarily involved with educating the child (i.e., the special or regular education teacher) and standing on peer acceptance measures specific to the setting in which the child is placed.

Social validation of intervention programs for the mentally retarded has received increased attention in recent years (see Kazdin & Matson, 1981 for a review). Kazdin and Matson (1981) see a major problem with using subjective judgments as a method of social validation. They suggest that global ratings of behavior may improve dramatically with little or no corresponding changes in objective measures of behavior rates. In this case, Type II measures (naturalistic rates of behavior) would fail to predict Type I measures (subjective judgments or ratings by significant others). Using the competence-correlates definition of social validation, however, this finding may call into question the validity of the Type II measures moreso than the validity of the Type I measure. It could be that nontarget behaviors changed as a result of the intervention (response covariation) which were reflected in the subjective judgments, but were not captured by the observation code. While extraneous

variables (e.g., expectation biases, experimenter bias, etc.) can affect ratings or judgments, it cannot be assumed that increases in ratings without corresponding increases in certain observed behaviors automatically invalidates subjective judgments. As previously discussed, Type II measures are not socially valid in and of themselves, but rather they are socially validated by their ability to predict an individual's standing on Type I measures.

A final issue regarding the social validation of SST programs using Type I measures relates to the competence-correlates conceptualization of children's social skills (Asher & Markell, Note 1; Gresham, 1981b, 1982a). Social skills are defined by McFall (1982) as the specific abilities that enable a person to perform competently at particular social tasks. This is another way of saying that behaviors can be considered socially skilled if they predict or correlate with Type I measures. By targeting those behaviors that best predict an individual's standing on a Type I measure, we should be able to effect socially valid changes in children's social behavior. To date, there is little research investigating those specific behaviors which best predict children's levels of peer acceptance, ratings of competence by parents and teachers, and mental health status in adulthood. Until we can demonstrate that certain social skills predict important social outcomes for children, the ultimate social validity of SST will remain unknown.

There is an obvious need for multivariate research that

would select various Type II measures of social skills and derive an optimum prediction on Type I measures. An initial, and somewhat restricted, attempt at this was done by Gresham (1982b) using stepwise multiple regression procedures and two different varieties of Type I measures (i.e., peer nominations and peer ratings). Future research could be conducted using a much wider variety of Type II measures taking into account such variables as age, sex, race, setting, and other demographics using sophisticated statistical procedures such as multiple regression, cannonical correlation, stepwise discriminant analysis, factor analysis, and the like.

McFall (1982) has suggested that the appropriate unit of analysis for social skills is a task. A task reflects a compromise between the trait and molecular models of social competence and essentially is defined by what people do (e.g., succeeding in school, having a conversation, etc.). The focus of future research should be to analyze the essential components of these behavioral tasks and, in turn, evaluate how various tasks predict important social outcomes for children. According to McFall (1982):

> . . . Structural models of tasks and subtasks, along with specifications of the relationships among the task units, must be proposed, tested, and revised according to accepted scientific methods and principles. . . . the best structural model of a task hierarchy is the one that works best for describing, predicting, and explaining behavior (p. 15).

The three types of measures discussed vary in their ability to describe, explain, and predict behavior. Type I measures were proffered as socially valid measures of social competence because of their importance to significant others and social systems, as well as their predictive validity (e.g., sociometrics). Type II measures derive their value from their ability to describe and explain possible antecedents and consequences of children's performance on Type I measures. Through multivariate research techniques (e.g., stepwise multiple regression, etc.) essential and nonessential components of behavioral tasks can be empirically derived and related to children's performance on Type I measures. Type III measures to date have been relatively useless in describing, predicting, and explaining behavior. While these measures may possess some theoretical construct validity, their utility as socially valid indices of social competence is highly questionable at this point.

The bottom line in evaluating the effectiveness of social skills training programs is perhaps pointed out most cogently by Gottman et al. (1976):

> . . . social skills training programs need to demonstrate two things: that they teach the target social skills, and that these skills make a difference on criterion variables such as sociometric position (p. 195).

Unless we can demonstrate that social skills training predicts important social outcomes for children, conclusions about the effectiveness of these training programs will be limited.

Reference Notes

1. Asher, S.R., & Markell, R.S. Peer relations and social interaction: Assessment and intervention. Unpublished manuscript, University of Illinois, 1978.

2. Greenwood, C.R., Walker, H.M., Todd, N.M., & Hops, H. Validating teacher selection with normative data for preschool social interaction. Presented at the 84th Annual Meeting of the American Psychological Association, Washington, D.C., September, 1976.

References

Asher, S.R., & Hymel, S. Children's social competence in peer relations: Sociometric and behavioral assessment. In J.D. Wine & M. D. Smye (Eds.), Social competence. New York: Guilford Press, 1981.

Asher, S.R., Oden, S.L., & Gottman, J.M. Children's friendships in school settings. In L.G. Katz (Ed.), Current topics in early childhood education, Vol. 1. Norwood, N.J.: Ablex, 1977.

Bellack, A.S. A critical appraisal for strategies for assessing social skills. Behavioral Assessment, 1979, 1, 157-176.

Bellack, A.S., Hersen, M., & Lampmarski, D. Role-play tests for assessing social skills: Are they valid? Are they useful? Journal of Consulting and Clinical Psychology, 1979, 47, 335-342.

Bellack, A.S., Hersen, M., & Turner, S.M. Role play tests for assessing social skills: Are they valid? Behavior Therapy, 1978, 9, 448-461.

Berler, E.S., Gross, A.M., & Drabman, R.S. Social skills training with children: Proceed with caution. Journal of Applied Behavior Analysis, 1982, 15, 41-53.

Bolstad, O.D., & Johnson, S.M. Self-regulation in the modification of disruptive classroom behavior. Journal of Applied Behavior Analysis, 1972, 5, 443-454.

Bonney, M.E., & Powell, J. Differences in social behavior between sociometrically high and sociometrically low children. Journal of Educational Research, 1953, 46, 481-496.

Borke, H. The development of empathy in Chinese and American children between three and six years of age: A cross-culture study. Developmental Psychology, 1973, 9, 102-108.

Bornstein, M.R., Bellack, A.S., & Hersen, M. Social skills training for unassertive children: A multiple baseline analysis. Journal of Applied Behavior Analysis, 1977, 10, 183-195.

Brophy, J. Teacher praise: A functional analysis. Review of Educational Research, 1981, 51, 5-32.

Camp, B.W., Bloom, G.E., Herbert, F., & van Doorninck, W.J. "Think Aloud": A program for developing self-control in young aggressive boys. Journal of Abnormal Child Psychology, 1977, 5, 157-169.

Campbell, D.T., & Fiske, D.W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.

Chandler, M.J. Egocentrism and antisocial behavior: The assessment and training of social perspective-taking skills. Developmental Psychology, 1973, 9, 326-332.

Cooke, T.P., & Apolloni, T. Developing positive social-emotional behavior: A study of training and generalization effects. Journal of Applied Behavior Analysis, 1976, 9, 65-78.

Cowen, E.L., Pedersen, A., Babigian, H., Izzo, L.D., & Trost, M.A. Long-term follow-up of early detected vulnerable children. Journal of Consulting and Clinical Psychology, 1973, 41, 438-446.

Cronbach, L.J. Essentials of psychological testing (3rd edition). New York: Harper & Row, 1970.

Evers-Pasqvale, W.L. The Peer Preference Test as a measure of reward value: Item analysis,cross-validation, concurrent validation, and replication. Journal of Abnormal Child Psychology, 1978, 6, 175-188.

Evers, W.L., & Schwarz , J.C. Modifying social withdrawal in preschoolers: The effects of filmed modeling and teacher praise. Journal of Abnormal Child Psychology, 1973, 1, 248-256.

Feldhusen, J., & Houtz, J. Problem solving and the concrete-abstract dimension. Gifted Child Quarterly, 1975, 19, 122-129.

Foster, S.L., & Ritchey, W.L. Issues in the assessment of social competence in children. Journal of Applied Behavior Analysis, 1979, 12, 625-638.

Garmezy, N. Children at risk: The search for antecedents of schizophrenia - Part I: Conceptual models and research methods. Schizophrenia Bulletin, 1974, 8, 14-90.

Gottlieb, J., Semmel, M.I., & Veldman, D.J. Correlates of social status among mainstreamed mentally retarded children. Journal of Educational Psychology, 1978, 70, 396-405.

Gottman, J.M. The effects of a modeling film on social isolation in preschool children: A methodological investigation. Journal of Abnormal Child Psychology, 1977, 5, 69-78.

Gottman, J.M., Gonso, J., & Rasmussen, B. Social interaction, social competence, and friendship in children. Child Development, 1975, 46, 708-718.

Gottman, J.M., Gonso, J., & Schuler, P. Teaching social skills to isolated children. Journal of Abnormal Child Psychology, 1976, 4, 179-197.

Green, K.D., & Forehand, R. Assessment of children's social skills: A review of methods. Journal of Behavioral Assessment, 1980, 2, 143-159.

Green, K.D., Forehand, R., Beck, S.J., & Vosk, B. An assessment of the relationship among measures of children's social competence and children's academic achievement. Child Development, 1980, 51, 1149-1156.

Green, K.D., Vosk, B., Forehand, R., & Beck, S. An examination of differences among sociometrically identified accepted, rejected, and neglected children. Child Study Journal, 1981, 11, 117-124.

Greenwood, C.R., Walker, H.M., & Hops, H. Issues in social interaction/withdrawal assessment. Exceptional Children, 1977, 43, 490-499.

Gresham, F.M. Assessment of children's social skills. Journal of School Psychology, 1981, 19, 120-133. a

Gresham, F.M. Social skills training with handicapped children: A review. Review of Educational Research, 1981, 51, 139-176. b

Gresham, F.M. Validity of social skills measures for assessing the social competence in low-status children: A multivariate investigation. Developmental Psychology, 1981, 17, 390-398. c

Gresham, F.M. Misguided mainstreaming: The case for social skills training with handicapped children. Exceptional Children, 1982, 48, 422-433. a

Gresham, F.M. Social interactions as predictors of children's likeability and friendship patterns: A multiple regression analysis. Journal of Behavioral Assessment, 1982, 4, in press. b

Gresham, F.M., & Nagle, R.J. Social skills training with children: Responsiveness to modeling and coaching as a function of peer orientation. Journal of Counsulting and Clinical Psychology, 1980, 48, 718-729.

Gronlund, H., & Anderson, L. Personality characteristics of socially accepted, socially neglected, and socially rejected junior high school pupils. In J. Sederman (Ed.), Educating for mental health. New York: Crowell, 1963.

Hartup, W.W., Glazer, J.A., & Charlesworth, R. Peer reinforcement and sociometric status. Child Development, 1967, 38, 1017-1024.

Hops, H., & Greenwood, C.R. Social skills deficits. In E.J. Mash & L.G. Terdal (Eds.), Behavioral assessment of childhood disorders. New York: The Guilford Press, 1981.

Jakichub, Z., & Smerglio, V. The influence of symbolic modeling on the social behavior of preschool children with low levels of social responsiveness. Child Development, 1976, 47, 838-841.

Kazdin, A.E. Assessing the clinical or applied importance of behavior change through social validation. Behavior Modification, 1977, 1, 427-451.

Kazdin, A.E., & Mascitelli, S. Covert and overt rehearsal and homework practice in developing assertiveness. Journal of Consulting and Clinical Psychology, 1982, 50, 250-258.

Kazdin, A.E., & Matson, J.L. Social validation in mental retardation. Applied Research in Mental Retardation, 1981, 2, 39-53.

Kendall, P.C., & Braswell, L. Assessment for cognitive-behavioral interventions in the schools. School Psychology Review, 1982, 11, 21-31.

Kendall, P.C., & Wilcox, L.E. Self-control in children: Development of a rating scale. Journal of Consulting and Clinical Psychology, 1979, 47, 1020-1030.

Kendall, P.C., Zupur, B.A., & Braswell, L. Self-control in children: Further analyses of the Self-Control Rating Scale, Behavior Therapy, 1981, 12, 667-681.

Kohn, M. The Kohn Social Competence Scale and Kohn Symptom Checklist for the preschool child: A follow-up report. Journal of Abnormal Child Psychology, 1977, 5, 249-262.

Ladd, G.W. Effectiveness of a social learning method for enhancing children's social interaction and peer acceptance. Child Development, 1981, 52, 171-178.

Ladd, G.W., & Oden, S. The relationship between peer acceptance and children's ideas about helpfulness. Child Development, 1979, 50, 402-408.

La Greca, A.M. Peer acceptance: The correspondence between children's sociometric scores and teacher's ratings of peer interactions. Journal of Abnormal Child Psychology, 1981, 9, 167-178.

La Greca, A.M., & Santogrossi, D.A. Social skills training with elementary school students: A behavioral group approach. Journal of Consulting and Clinical Psychology, 1980, 48, 220-227.

Lahey, B.B., & Strauss, C.C. Some considerations in evaluating the clinical utility of cognitive behavior therapy with children. School Psychology Review, 1982, 11, 67-74.

MacMillan, D.L., & Morrison, G.M. Correlates of social status among mildly handicapped learners in self-contained special classes. Journal of Educational Psychology, 1980, 72, 437-444.

MacMillan, D.L., Morrison, G.M., & Silverstein, A.B. Convergent and discriminant validity of Project PRIME's Guess Who? American Journal of Mental Deficiency, 1980, 85, 78-81.

Marshall, H.R., & McCandless, B.R. A study in the prediction of social behavior of preschool children. Child Development, 1957, 28, 149-159. a

McCandless, B.R., & Marshall, H.R. Sex differences in social acceptance and participation of preschool children. Child Development, 1957, 28, 421-425.

McFall, R.M. A review and reformulation of the concept of social skills. Behavioral Assessment, 1982, 4, 1-33.

McGuire, J.M. Aggression and sociometric status with preschool children. Sociometry, 1973, 36, 542-549.

Minkin, N., Braukmann, C.J., Minkin, B.L., Timbers, G.D., Timbers, J.B., Fixen, D.L., Phillips, E.L., & Wolf, M.M. The social validation and training of conversation skills. Journal of Applied Behavior Analysis, 1976, 9, 127-140.

Morrison, G.M. Sociometric measurement: Methodological consideration of its use with mildly learning handicapped and nonhandicapped children. Journal of Educational Psychology, 1981, 73, 193-200.

Moore, S.G., & Updegraff, R. Sociometric status of preschool children related to age, sex, nurturance giving, and dependency. Child Development, 1964, 35, 519-524.

O'Connor, R.D. Modification of social withdrawal through symbolic modeling. Journal of Applied Behavior Analysis, 1969, 2, 15-22.

O'Connor, R.D. Relative effects of modeling, shaping, and combined procedures for modification of social withdrawal. Journal of Abnormal Psychology, 1972, 79, 327-334.

Oden, S. A child's social isolation: Origins, prevention, intervention. In G. Cartledge & J.F. Milburn (Eds.), Teaching social skills to children: Innovative approaches. New York: Pergamon Press, 1981.

Oden, S.L., & Asher, S.R. Coaching children in social skills for friendship making. Child Development, 1977, 48, 495-506.

Pekarik, E.C., Prinz, R.J., Liebert, D.E., Weintraub, S., & Neale, J.M. The Pupil Evaluation Inventory: A sociometric technique for assessing children's social behavior. Journal of Abnormal Child Psychology, 1976, 4, 85-97.

Putallaz, M., & Gottman, J.M. Social skills and group acceptance. In S.R. Asher & J.M. Gottman (Eds.), The development of children's friendships. New York: Cambridge University Press, 1981.

Reardon, R.C., Hersen, M., Bellack, A.S., & Foley, J.M. Measuring social skill in grade school boys. Journal of Behavioral Assessment, 1979, 1, 87-105.

Roff, M., Sells, S.B., & Golden, M.M. Social adjustment and personality development in children. Minneapolis: University of Minnesota Press, 1972.

Selman, R.L. The growth of interpersonal understanding: Developmental and clinical analyses. New York: Academic Press, 1980.

Singleton, L.C., & Asher, S.R. Peer preferences and social interaction among third-grade children in an integrated school district. Journal of Educational Psychology, 1977, 69, 330-336.

Spivack, G., Platt, J., & Shure, M.B. The problem-solving approach to adjustment. San Francisco: Jossey-Bass, 1976.

Spivack, G., & Shure, M.B. Social adjustment of young children. San Francisco: Jossey-Bass, 1974.

Stager, S.F., & Young, R.D. Intergroup contact and social outcomes for mainstreamed EMR adolescents. American Journal of Mental Deficiency, 1981, 85, 497-503.

Stephens, T.M. Social skills in the classroom. Columbus, Ohio: Cedars Press, 1978.

Strain, P.S. An experimental analysis of peer social initiations on the behavior of withdrawn preschool children: Some training and generalization effects. Journal of Abnormal Child Psychology, 1977, 5, 445-455.

Strain, P.S., Cooke, R.P., & Apolloni, T. Teaching exceptional children: Assessing and modifying social behavior. New York: Academic Press, 1976.

Strain, P.S., & Kerr, M.M. Modifying children's social withdrawal: Issues in assessments and clinical intervention. In M. Hersen, R. Eisler, & P.Miller (Eds.), Progress in behavior modification, Vol. 11. New York: Academic Press, 1981.

Strain, P.S., Shores, R.E., & Kerr, M.M. An experimental analysis of "spillover" effects on the social interaction of behaviorally handicapped preschool children. Journal of Applied Behavior Analysis, 1976, 9, 31-40.

Ullman, C.A. Teachers, peers, and tests as predictors of adjustment. Journal of Educational Psychology, 1957, 48, 257-267.

Urbain, E.S., & Kendall, P.C. Review of social-cognitive problem-solving interventions with children. Psychological Bulletin, 1980, 88, 109-143.

Van Hasselt, V.B., Hersen, M., & Bellack, A.S. The validity of role play tests for assessing social skills in children. Behavior Therapy, 1981, 12, 202-216.

Van Hasselt, V.B., Hersen, M., Whitehill, M.B., & Bellack, A.S. Social skill assessment and training for children: An evaluative review. Behavior Research and Therapy, 1979, 17, 413-437.

Van Houten, R. Social validation: The evolution of standards of competency for target behaviors. Journal of Applied Behavior Analysis, 1979, 12, 581-591.

Vosk, B., Forehand, R., Parker, J.B., & Rickard, K. A multimethod comparison of popular and unpopular children. Developmental Psychology, 1982, 18, in press.

Weintraub, S., Neale, J.M., & Liebert, D.E. Teacher ratings of children vulnerable to psychopathology. American Journal of Orthopsychiatry, 1975, 45, 838-845.

Weintraub, S., Prinz, R.J., & Neale, J.M. Peer evaluations of the competence of children vulnerable to psychopathology. Journal of Abnormal Child Psychology, 1978, 6, 461-473.

Weinrott, M.R., Corson, J.A., & Wilchesky, M. Teacher-mediated treatment of social withdrawal. Behavior Therapy, 1979, 10, 281-294.